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FARM NOTES.

Many queries on timely topics are coming in just now that require immediate answer. Some of these are inserted in place of my Notes this week.

All indications go to show that farmers are making better and more thorough preparations for the prosecution of farm work in all its details during the coming season. Business principles will be applied as never before.

From what I can learn, in going around among the farmers all through the State, the owners of many farms will be their own "hired hands" for the first time in many years. Many are cutting their own wood this winter, instead of hiring it done, as had been their custom. To a certain extent this is wise, and all who can should hire as little as possible.

Hired help on the average farm now takes all, or nearly all, the profit, if there is any profit. It is only when one has some speciality, such as dairying, stock breeding, etc., that is bringing extra prices, that one feels willing to hire, and then simply because it is absolutely necessary for the continued prosecution of the business. Many farmers who have kept a "hired man" every season for several years, say they shall do their own work this coming season, except when necessary to hire a little by the day.

CLOVER SEEDING.

I desire to seed about 25 acres of land to red clover, to be plowed under in the fall of 1898. I have not had very good success sowing it with oats in the spring. Will you kindly give me your advice about this as to how best to get a good stand of clover? Perhaps something could be sowed to give shade after the oats are cut off.

SAGINAW CO. S. G. HIGGINS.

See recent issues of the FARMER, which we send you as you are a new subscriber.

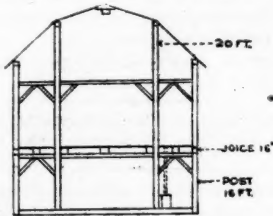


FIG. 2. END OF FRAME.

Do not seed with oats, if you can possibly seed alone, or with wheat. I have seldom succeeded in securing a crop of clover sown on oat ground.

In those recent issues of the FARMER you will find full directions regarding selection of seed, time and method of sowing clover. The main difficulty in recent years has been, not to secure a catch or stand of clover, but to bring even a fair growth through to maturity.

SEEDING LOW GROUND.

What would be your idea of suitable grass seed for a piece of low ground, form-

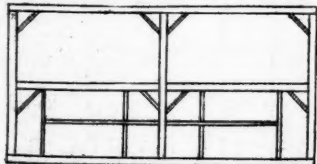


FIG. 3. SIDE VIEW OF FRAME.

erly timbered with tamarack, pine and huckleberries, and still covered with water to some extent in fall and early spring. The soil is not very fertile, and on close scrutiny resembles tanbark more than earth mold. Want to raise hay for my own use.

MASON CO.

C. G. WING.

The first thing necessary is to provide

some means of drainage for this piece of ground. No grass seed can be sown, with any reasonable hope of securing much good hay, until this is done. Can the ground be ditched with a good outlet provided?

If fairly well drained you might seed to timothy, orchard grass, red top and tall oat grass. I confess that the prospect is not very bright from your description.

MAKING MAPLE SYRUP.

As I am a reader of the FARMER, I would like the opinion of some of the readers who have had experience in making maple sugar and syrup.

What would be the best material for making a pan? A neighbor told me not to make a pan of galvanized sheet iron as it would be apt to poison the syrup. What is your opinion?

G. B. BRANCH CO.

This has just reached the writer, and needs an immediate answer, but he is not informed regarding details and materials used in this business. It seems practical to

high, with a roller and track outside. The mangers are made by using 2x4 scantling for corners, 3 feet high, with a one-foot baseboard and six-inch board at the top, with three-inch slats every 16 inches, nailed upright, and two boards, each a foot wide, form the bottom.

Four mangers are set so as to form a hall four feet wide in the center; a cistern is at the rear end with a gas pipe inserted at the base and an L faucet in the center of building where a water tub at either side can be filled very conveniently; and the clover hay thrown in the hall can be placed in the mangers without disturbing the sheep. The upstairs will hold about nine tons of clover hay, and a grain box at the head of stair, to hold a 100 bushels of grain; a spout from it to the hall below makes things handy.

The windows as well as the yard doors slide back so as to be easily adjusted.

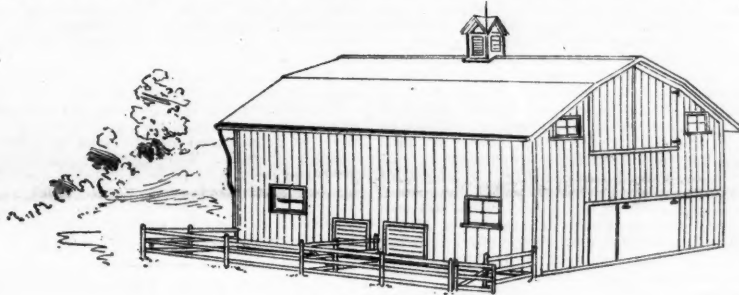


FIG. 1. SIZE 32 X 20 FEET.

suppose that galvanized sheet iron should be rejected for boiling the sap into syrup. It is almost too late this season to help you out in the construction of your pan, as sugar making is now in full operation.

DOES FEEDING ROOTS INCLUDE POTATOES?

W. A. Avery, of Livingston county, wishes to know if M. Nelson feeds potatoes to his cows just before calving, or does not his feeding roots include potatoes? Friend Nelson did not mention potatoes, but it is, without a doubt, true that he feeds a few of them.

In preparing a cow for calving, roots of any kind might be fed quite liberally, but no doubt friend Nelson referred more particularly to bagas and mangel wurzels.

March 11, 1897.

J. H. BROWN.

For the Michigan Farmer.

A CONVENIENT SHEEP BARN.

The accompanying cut, Fig. 1, shows a finished sheep barn, capable of accommodating 50 head and their produce, until pasturage. The inside is divided into four apartments, each with a yard outside, so that the stronger may be separated from the weaker. This barn is 20x32 feet, with 15-foot posts, requiring 16-foot lumber.

At the mills in this county good hemlock lumber is worth \$7 per M; cedar shingles \$1 per M. The material for this barn will cost \$100 here, and any handy farmer can get it into shape, though it might pay to hire a mechanic to lay it out and do some finishing.

The mangers are movable and the hurdle fence is set in slots at either end so that the interior can be moved in ten minutes and the inside can be made use of in summer for running in wagons or buggies. The manure can be loaded on the wagon from inside and taken to the field immediately after the sheep are removed to their pasture, as the ammonia in sheep manure escapes very fast, and becomes almost worthless if left inside for any length of time.

The main door is 8 feet broad and 7 feet

There is a 3x4 scantling at the ridge running two feet out at the end for a trolley car to elevate the hay while unloading.

This building will take 8 M of shingles, 9 M of lumber, and 2 M of timber, \$5 for windows, \$5 for nails, and \$5 for paint, and make a very convenient sheep barn for \$100. A, is cistern; B, mangers; C, water tub; D, doors; E, stair; F, hall; G, hurdle. The plan is laid off at 16 feet to the inch.

HURON CO., MICH.

R. A. BROWN.

For the Michigan Farmer.

FAILURE IN SEEDING.

Not seeing anything in your paper that would answer my questions, I take the liberty to ask two.

First, would it do any good to sow grass seed on creek bottom flats that were seeded two years ago and pastured last year, also and orchard grass being used to seed with? The seeding does not make good pasture. Too thin and short. What kind of seed would be best? I intend to pasture it this summer with cows.

Second, I have a field that has been seeded two or three times in the last four years,

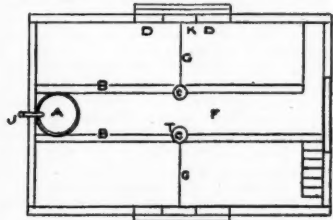


FIG. 4. GROUNDPLAN.

except last year. Was then in potatoes with barnyard manure plowed under. Now which do you think would be best? To plow up the manure and sow to oats and seed again? Or drag it down, sow enough rye to shade the young clover and sow clover again? Seeding the ground is the main point. The manure being plowed under I did not know but it would help the clover without plowing again. Soil is high sandy loam.

OAKLAND CO.

READER.

[You might try scarifying the surface with a disc or spike-tooth harrow, then

sow on more seed, using timothy, orchard grass, red clover and tall oat grass. If wet enough during the coming season your old seeding may thicken up considerably, but if reseeded you could not pasture your cows thereon, until in the fall at least. It is hard for us to advise you, at this distance, anyway.

As to your second query we should say, drag the surface well and seed again this spring. Rye might help, but clover alone



FIG. 5
END VIEW OF MANGER.

can usually look out for itself, if not crowded by a nurse crop or "used up" by insect pests. Too

much plowing without seeding down and growing some clover is the trouble with many fields.—Ed.]

SOWING SPRING WHEAT.

Please let me know through your valuable paper where spring wheat can be bought for seed, and the best variety to raise in Genesee County.

If corn ground was clean from weeds last summer, would it be better to pulverize or plow the ground?

J. H. B.

GENESEE CO.

I have a mind to try some spring wheat this spring if I can get the seed. Can you tell me where I can get it, where it is free from oats and all right?

R. F. PORRITT.

OAKLAND CO.

[Considerable interest is being stirred up over the advisability of sowing spring wheat in this State. We cannot now recall a single instance of successful production of this variety.]

It is necessary to have the ground prepared very early in the spring, and fall plowed ground is preferable. In the northwest the grain is sowed some two or three weeks before we think of commencing spring tillage, the wheat being actually sown in the mud in some instances.

If friends J. H. B. and Porritt wish to try spring wheat we suggest sowing a very small field as an experiment. Write any of the leading seedsmen who advertise in the FARMER, and you should obtain just what you need. We cannot recommend any particular variety for this State from present information.

If J. H. B.'s corn ground is clean and the surface not too hard he can pulverize it well with a disc harrow. We should, in using this tool, follow the corn rows, passing to and fro across the field and lapping half way. The solid disc does not cut quite so well as a cutaway disc, but it is better to "disc" such ground in the spring than to plow it up, thus preventing a thorough compacting of the seed bed previous to sowing the wheat.—Ed.]



FIG. 6.
SIDE VIEW OF MANGER.

GRASS SEEDING.

I have a piece of ground that I plowed last fall for wheat but it came on so wet that I got only part of it sowed. Now I would like to know what to put on the remaining part so I can seed it down this spring along with the rest.

I suppose I might use millet, but I am not very fond of it, so do not want to sow any. How much clover and timothy seed, mixed, ought to be sowed to the acre? How much timothy seed clear ought to be sowed to the acre on clay soil?

GENESEE CO.

ROYCE C. MILLARD.

[If you wish to seed down for meadow or pasture, we should advise sowing about five quarts of clover seed per acre on the whole piece. The best time to sow timothy seed is in the fall, but if sown this spring

we should use from two to four quarts per acre, according to your requirements of the land seeded down.

We should be inclined to sow clover alone this spring, using a little alsike along with the red clover. The ground not seeded to wheat could be somewhat more heavily seeded to clover, but it may not be necessary. In fact, in a dry season, the same quantity of clover seed per acre on the vacant ground should produce a much larger growth than on the portion where the wheat is growing.—Ed.]

For the Michigan Farmer.

WINDMILLS AND GRINDING.

I have been much interested in the articles on power mills, grinders, etc. Now, all farmers cannot afford geared windmills or tread powers, neither is it advisable unless they have a natural ability to look after them, as the best of machinery in the hands of some men will be short-lived and unprofitable.

I have used a three-horse tread power a number of years, and find it a very convenient tool. But when feed-grinding came down to five cents per hundred, the expense ate up the profit. Thinking to economize, I purchased, last fall, an oscillating windmill grinder, at an expense of \$9.45, figuring that it would pay for itself in two years, and it has succeeded beyond my expectations.

My windmill is a ten-foot wheel on the barn, and cost \$35 eleven years ago. I set the grinder over the granary so the feed does not need moving. With a good wind it will grind fine one bushel per hour, with no attention except oil once or twice per day. One must keep grain in the hopper, which holds six bushels.

To get rid of the nails, nuts, etc., I pass the grain through a spout with a ten-inch magnet in the bottom of it. Have had no trouble since adopting this plan. With a larger wheel this would grind much more, as I do not use the grinder to half its capacity.

IONIA, CO.

HENRY J. HALL.

[It is very true that the best machinery in the hands of some men will soon wear out. Our best farmers take good care of their tools, and the hard times have caused many formerly negligent farmers to treat their implements with greater respect. Only necessary tools should be purchased, and then be sure to take good care of them when not in actual use.

We never saw one of those grinders at work. With one of these, how much would a 12-foot wheel grind in a good breeze?—Ed.]

For the Michigan Farmer.

SEVERAL THINGS.

In the reports of Farmers' Clubs I notice that one club was in favor of raising the tariff on beans to fifty cents. Would like to ask if there has been any pea beans imported this season. It has been said that formerly about one-third of the beans used in this country were imported, but I supposed that the present low price would keep out foreign beans. Or is it the importation of foreign beans that has made the price so low?

Another club discusses the "miller." Would like to hear a good intelligent discussion of this "fellow." Associate Editor Brown, I think, mentioned that he sometimes fought him on the subject of bran. Before I start to fight a man I think it well to look him over and see if he is a bigger man than I. If I find that he is quite muscular, I keep away from him. I am afraid that he (the miller) is a bigger man than either Mr. Brown or myself.

If the old fellow needs fighting, better not tackle him alone, but let everybody join a Grange or Farmers' Club, and then go at him, the same as we have the county officials. It seems a little odd that he should make the price for us when we sell to him, just the same as when he sells to us, especially when we are all so much bigger than he is. Let's not stand whining around, but if he needs looking after just attend to him after the up-to-date fashion.

As to sweet corn once more. The first time we raised it was greatly taken with it, and fed it to everything we had on the farm. I do not think it did any animal any harm, but noticed after it was husked the hogs did not digest it. Also noticed that it very perceptibly increased the flow of milk when fed to the cows. Also noticed that hard corn would do the same thing.

I rather think that dairymen first think sweet corn in the milk or roasting stage will cause cows to give the same amount as the hard corn, but I do not believe it will make the same amount of butter. In fact, a farmer once told me that he fed a large quantity of sweet corn to his cows, because he could find no market for it. It greatly increased the flow of milk, but he could not get any more butter.

BAY CO.

J. B. STEVENS.

[The only way we have been able to personally "fight" the miller, in securing his bran, has been to buy bran when there was little demand for it. By watching the market we find that bran rules quite low in July and August, as a general thing. This is a good time to buy strictly fresh, high grade bran, and we prefer to purchase of our home miller.

A few weeks ago we found that bran was accumulating in our home mill, and the

proprietor was very anxious to convert some of it into cash. We immediately secured what we needed at eight dollars per ton. It is only by "watching our chance" that we secure bran at reasonable rates.

By all means let us make haste to complete our organization of the farmers, as friend Stevens suggests, and each one who reads this should "fall into line," if he has not already. In union there is great strength, and our "influence" is even now being spoken of by other classes, as "great" and to be "respected."

Very few beans have been imported during the last two years on account of the low prices. The supply and demand of course has largely controlled the price of beans. Last year's crop of beans was good, but a fair percentage was not harvested in perfect condition. Some farmers still hold a portion of their crop grown two years ago.—Ed.]

A NEW REMEDY FOR POTATO SCAB.

Potato scab is a source of material loss to those who grow potatoes for the market, and a great blemish in all cases. It is one of the triumphs of practical botany that the cause of this trouble has been traced to a minute germ that feeds on the surface of the potato tuber, and to a less extent on other fleshy roots and tubers. It has also been found that a suitable fungicide will kill the germs on the tubers without injuring the growth of the potatoes. Corrosive sublimate meets these requirements and has been advocated by the Purdue Experiment Station, where its application originated. So effective has it been found, so cheap and easy to apply, that many large growers, who get extra prices for their crops by having high grade product, have adopted the treatment as a regular thing.

The deadly poisonous nature of corrosive sublimate, however, has kept it from coming into general use. It is, therefore, considered a matter of considerable moment to be able to announce the discovery of a new fungicide for potato scab, one that is thoroughly efficient and not poisonous. The new substance is formalin (sometimes called formaldehyde), a watery solution of a gas, not very expensive, and rapidly coming into favor as a general antiseptic, so that it is likely to become still cheaper and better known. It is sold by the fluid ounce, and can be obtained at most drug stores.

The method of using the new fungicide is very simple. Eight ounces of the formalin are added to 15 gallons of water, and in this the seed potatoes are soaked for two hours. After taken from the bath they can be cut and planted as usual, either at once or after some time. Formalin is not corrosive, and so can be used in any kind of vessel, and not being poisonous, there are no particular precautions to be observed. It does, however, make the hands smart, if there are any raw spots, and the fumes irritate the eyes and throat. But these are only slight annoyances. Further information about formalin and its use as a fungicide will be given in a bulletin to be issued in a short time.

The potato crop of the State of Indiana reaches annually the large figure of over 90,000 acres, and nearly 6,000,000 bushels, and is sometimes larger. The treatment of the seed tubers as here recommended will materially raise the market value of the crop, and prove a source of profit of no mean proportion. Try it. J. C. ARTHUR, IND. EXP. STATION. Botanist.

For the Michigan Farmer.

WORK ON THE FARM.

After waking from our wood-chuck slumber we find sugar making on our hands. The storm of last summer played havoc with our sugar bush by blowing down about fifty large trees, which will leave us with a large surplus of pans. We will, however, put two or three pans to some of the larger trees, so we can use them nearly all.

This may be a little harder on the trees, but as the wind is blowing more or less down every spring, it won't be but a few years 'till nearly all the trees will be gone, so we will make the best of them while they last.

It is a very nice thing to have all the maple syrup you want to use on buckwheat cakes in the spring. We use a great deal for that purpose, besides boiling it down in the winter time to make wax and warm sugar whenever we want it.

The trees that were blown down will be cut into wood and corded up, and the brush all piled and limbs cut 'nto wood for making sugar another year. There will be enough trees blown down to make 200 cords of wood. It looks cruel to see our woods so torn to pieces, but it can't be helped. The wind has a sweep for about eight miles from the west, which causes great damage every spring.

Cloverseed sowing is here again. I want to sow some still morning when the ground is well "honeycombed," about 5 quarts to the acre. We sent to Missouri this year and got our seed of a farmer, and it is the nicest lot of seed I ever saw. The color is almost perfect and there is nothing objectionable in it. It cost us nearly a dollar less on the bushel than the same quality here.

It is getting so that it is unsafe to sow seed grown in our own neighborhood, unless you know the man who raised it, or saw it growing. Two or three years ago I got seed of a farmer that I thought was all right, and when the time came I found I had a field full of mustard. This experi-

ence has caused me to look upon home-grown seed with some suspicion.

Our fields are full of prickly lettuce all through the country, but our three years' rotation will, with a little care, keep all such weeds in check, and we don't feel very much alarmed about them. Then we have taken all the inside fences out from our farming land, including the road fences, so all can be farmed, and this will be a great help in keeping those bad weeds out. We have our regular pastures and nothing is allowed to pasture on the land we farm.

Then there are the brood sows to look after. They will begin to farrow soon and will have to have warm places, with proper care.

There are a great many rails to haul and fences to rebuild. The fences have not been fixed up much for several years and I have taken this next summer to give them a general overhauling. Five or six small fields will be fenced off close around the barn for pasture lots. A part soiling system will be carried on when pasture becomes short. Hogs will be the main stock kept through the summer, and sweet corn will be grown to feed them.

These small feeding lots will be 40 rods long and about 10 rods wide, so that the whole field can be easily cut and carried and fed over the fence in an adjoining lot.

Then there will be a general "fixing up," by removing unsightly things, and fixing the front of the barnyard so it can be kept mowed. We need paint pretty badly on our barn, but it will have to go until times look a little more encouraging than they do now.

But the hard times don't hinder anyone from "fixing up," and making things look clean. These things I have planned to do this summer, and I have hired an extra hand for the purpose, and I hope to make things look better before another fall.

GRATIOT CO.

I. N. COWDREY.

The removal of inside fences on the farm, so far as practicable, we believe in and have practiced somewhat. For our purpose we need only the permanent pasture, divided into two parts, and the lane leading thereto from the barn and surrounding small yards. So many cross fences are a nuisance to us, and we find it difficult to keep the corners clean.

Our farm is long and narrow, and the permanent pasture nearly two-thirds of a mile from the barns. This makes a long narrow lane necessary. The lane fence is made up of all kinds of material and styles of fence and most of it unsatisfactory. The perfect fence has not reached us yet, though last season's wire fence pleases us.

We, too, would like to keep an extra man or boy to help "clean up" and "fix up," for there is great need of it. But we fear we cannot afford it. The greatest expense is for hired help, and it is a serious question for the average farmer as to whether it pays to do any more work on the farm than he can do himself, no matter how large the farm or complicated the work.—Ed.]

THE HOT WATER TREATMENT FOR OAT SMUT.

Provide two large vessels, preferably holding at least 20 gallons. Two wash kettles, soap kettles, wash boilers, tubs or even barrels, will do. One of the vessels should contain water, say at 110 to 120 degrees F., and the other scalding water at 132 to 133 degrees F. The first is for the purpose of warming the seed preparatory to dipping it into the second. Unless this precaution is taken it will be difficult to keep the water in the second vessel at the proper temperature. A pail of cold water should be at hand, and it is also necessary to have a kettle filled with boiling water from which to add from time to time to keep the temperature right. Where kettles are used a very small fire should be kept under the kettle of scalding water.

The seed which is to be treated must be placed, half a bushel or more at a time, in a closed vessel that will allow free entrance and exit of water on all sides. For this purpose there can be used a bushel basket made of heavy wire, inside of which is spread wire netting, say 12 meshes to the inch; or an iron frame can be made at a trifling cost, over which the wire netting can be stretched. This will allow the water to pass freely and yet prevent the passage of the seed. A sack made of loosely woven material, as gunny sack, can be used instead of the wire basket. A perforated tin vessel is in some respects preferable to any of the above.

Now dip the basket of seed in the first vessel, containing water at 110 to 120 degrees F.; after a moment lift it, and when the water has for the most part escaped plunge it into the water again, repeating the operation several times. The object of the lifting and plunging, to which should be added also a rotary motion, is to bring every grain in contact with the hot water. Less than a minute is required for this preparatory treatment, after which plunge the basket of seed into the second vessel, containing water at 132 to 133 degrees F.

If the thermometer indicates that the temperature of the water is falling, pour in hot water from the kettle of boiling water until the right degree is attained. If the temperature should rise higher than 133 degrees, add a little cold water. In all cases the water should be well stirred whenever any of a different temperature is added. The basket of seed should very shortly after its immersion be lifted and drained, and then plunged and agitated in

the manner described above. This operation should be repeated six or eight times during the immersion, which should be continued ten minutes. In this way every portion of the seed will be subjected to the action of the scalding water.

In practice it will be found best to have a man or boy devote his whole time to keeping the temperature at the right point, adding a little hot water if it falls below 132 degrees, and a little cold if it gets above 133 degrees F. A good thermometer should be used, preferably one having the bulb protected against injury from striking the sides of the vessel. The large thermometer used in dairy work is very good for this purpose. Another man should handle the grain and immerse and drain the portion being treated as directed above. After removing the grain from the scalding water, spread on a clean floor or piece of canvas to dry. The layer of grain should not be over three inches thick. If it can not be spread out at once, dip in cold water and set to one side until it can be attended to. It dries better if spread while still hot. Another portion of grain can then be treated, and so on until all the seed has been disinfected. Directions for drying the seed will be given further on.

The important precautions to be taken are as follows: (1) Maintain the proper temperature of the water (132 or 133 degrees F.), in no case allowing it to rise higher than 135 degrees or fall below 130 degrees; (2) see that the volume of scalding water is much greater (at least six or eight times) than that of the seed treated at any one time; (3) never fill the basket or sack containing the seed entirely full, but always leave room for the grain to move about freely; (4) leave the seed in the second vessel of water ten minutes.

When steam is available, it can be conducted into the second vessel (containing the scalding water) by a pipe provided with a stopcock, and this answers better than any other method for heating the water and for elevating the temperature from time to time. For small amounts a tub of warm water and a common wash boiler on a cook stove for the scalding water will answer every purpose. There are many possible modifications of the hot water treatment that are more easily used than the one here given, but whenever they have been tested on a large scale they have proven uniformly less successful in preventing smut than the method here given, and do not give as great an increase in yield. They are, moreover, not nearly as convenient as the potassium sulphide or bluestone and lime methods.—Yearbook U. S. Dept. of Agri., 1895.

SEEDING LOW, RICH GROUND.

We have three and one-half acres of land that is too wet for wheat. We want to get it seeded. It is so rich in plant food that if sown to oats it smothers out the grass seeding. What kind of seed would you sow if sown without a nurse crop? The ground was fall plowed. E. F. B. HILLSDALE CO.

[See other queries in this issue. We should seed down alone. Timothy would do well if not too wet.—Ed.]

A "MIXED" FIELD.

Please give me your opinion about seeding the following field: Quite level, part low, and part quite sandy. All light soil, and part quicksand bottom. It is now in wheat. Would like to sow this spring for hay. GEO. ALLEN.

[See other queries as to varieties of seed. If not sown to wheat, we should be tempted to first grow a crop of cow peas for fertility.—Ed.]

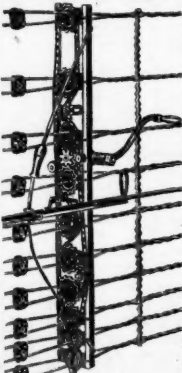
That Hood's Sarsaparilla purifies the blood and relieves a vast amount of suffering is not a theory but a well known fact.

The Buckeye Easy Cultivator shown in the P. P. Mast & Co.'s ad., which appears on another page seems to be an ideal machine for the level cultivation so necessary to success in hoed crops. It can be fitted out with either six or eight shovels and is furnished with either pin or spring shovels as the purchaser may desire. The two inside shovels are detached from the others and work independently enabling the operator to work close to the row, while the other shovels take care of the ground between the rows. Inquire for catalog and look into the merits of this machine.

How to Make a Fence.

Science has demonstrated that a wire cable is stronger than a single wire, and a fence whose horizontal bars are cables is superior to any other. This illustration represents such a fence and machine for making it, manufactured by the Cyclone Woven Wire Fence Co., Holly, Mich., who also sell all kinds of wire at wholesale prices.

This fence is built with one operation from top to bottom, without kneeling or stooping. No laying, moving or leveling track is required, as the machine rides the wire independent of the irregularities of the ground. Heavy wire is used in making the fence, which also adds to its strength and lasting qualities. The upright wires are shipped crimped, requiring very little more work to finish it, and anyone can build 60 to 100 rods a day. Machine works easily and has no wood parts, being composed largely of steel and malleable iron. Those interested in good wire fencing should write this responsible firm.



Live Stock.

For the Michigan Farmer.
RATIONS FOR BROOD SOWS.

In reply to F. Neff & Son, in the MICHIGAN FARMER of March 6th, I would say that swill, bran and water, with boiled potatoes, and occasional feeds of potatoes raw, is good feed for brood sows; but I think they should have more of a variety. If your sows produced strong, healthy pigs that were all right for a week or more, then began dying off, I believe your bad luck was due to bad management after farrowing time.

I aim to have my brood sows in good flesh at breeding time. I keep two sows of about same size together in a pasture lot of one-third to one-half of an acre. These pastures are seeded to either rye or clover and timothy. Their sleeping quarters are located at the opposite side of the lot from the feed floor, and are 8x8 feet, three feet high at the north, by six feet at south, shed roof, shingled; they are tight boarded, over tar paper. The frame is made of 2x4 perpendiculars; inside, twelve inches from the ground, I spike a 2x4 all around the house, except at entrance, which is simply a hole two feet wide and three feet high. The 2x4 pieces around the four sides inside are to prevent the hogs from crowding against the sides of the building, and makes a place for the little pigs to get around with little danger of being overlaid. I have the house as far away from the feeding place as possible, because it forces the sows to take a walk every time they eat, and I can size them up as they come to their meals.

I feed corn ground with the cob, ground rye and oats, mixed into thick slop with dish-water, skim milk and water, (wheat bran and middlings instead of the oats and rye would be as good). I feed three times a day, as much as they will eat and no more. In extremely cold weather I give them a half feed of ear corn morning and evening, with feeds of slop at 10 A. M. and 2 P. M. I feed ground carrots every noon in winter. Two months after service I drop the ear corn entirely. Two weeks before farrowing they are separated, each sow placed by herself. The cornmeal is discontinued, and a little oil meal added to the feed. I also feed about one-half pound of lard cracklings to each sow every two days during the last week before farrowing.

When the pigs have arrived the sow should have clear water near her, nothing more for two days, and not then unless she acts hungry; then, if she is all right, she will want the same kind of feed that she has had during the last two weeks, (except the cracklings), commencing with half feed and increasing slowly for a week, when she may have all she will eat. At about two weeks old the pigs will begin eating, and should have a place convenient to the dam's feeding place, but where she cannot interfere. Give them the same feed you do the sow, only do not wet it; when they leave their trough, empty and clean it. At four weeks old they will eat the same food the mother has, and by this time she should have the ground corn added to her ration again. As the pasture gets good I drop one feed a day.

I have tried raising pigs in a comfortable house without sunshine, but could not make it work. Afterwards I built a little pen adjoining each brood pen and kept it littered with straw. That worked better; but the old sow rooted it up, looking for something she couldn't get inside. My hoghouse is a workshop now. Hogs should always have fresh water without asking for it; and I have charcoal, ashes, salt and sulphur mixed and placed where they can help themselves to it, and they get away with considerable of it, too.

INGHAM CO., Mich. JOHN H. BANGHART.
[The above communication comes from an experienced and careful breeder, and outlines very fully the best methods for caring for brood sows. It emphasizes what the FARMER said in reply to Messrs. Neff & Son, as to the necessity for exercise, sunshine and good sanitary conditions. The elaborate hoghouse looks well on paper, and is all right theoretically; but they have been discarded by nearly all practical breeders. When it comes to the fattening season, however, a house can be used with much advantage in the way of saving labor and keeping the hogs growing rapidly during the few weeks they are undergoing the final preparation for the market. But even then there must be plenty of light and pure air, or some trouble is likely to occur before your hogs are ready for market. Dry sleeping nests are an absolute necessity to good health in the hog at all times, and a yard a foot deep in mud and filth will be sure to cost the owner or breeder dearly before he is through with it. —ED. FARMER.]

For the Michigan Farmer.

SCARCITY OF BEEF CATTLE.

The absence of good beef cattle in this part of the State is coming to be almost a calamity. There are two reasons for this scarcity: First, the multiplication of butter and cheese factories, and the great increase of the dairy business, has led to the breeding of Jersey cows on account of the richness of their milk, and it is a well established fact that this breed is nearly worthless for beef. Second, the great demand for veal

in our markets has prompted stock-raisers and farmers to sell their veal calves so that there are none left to grow up into good beef cattle. Farmers say that when a six-week-old calf will bring eight or ten dollars it is more profitable to sell them than to grow them into beef, and so the calves go, and there are no fat steers in the market, comparatively speaking.

A few dry cows which have outgrown their usefulness as milkers, or which never were good dairy cows, and an occasional bunch of steers and young heifers which escaped the "general slaughter of the first-born," are all that remain of the fine beef herds which were so plenty a few years ago, before the scrawny Jersey drove them away. And yet a good grade Durham steer two years old will sell off grass in the fall for \$40. Our experience at this very time on the farm is that a flock of 40 or 50 mutton ewes, and ten or fifteen grade steers, makes the easiest money that the farmer can get. They are hardy and easy to winter, will get their own living on good pasture in summer, while a few acres of corn and a little patch of roots, the balance of the farm in meadow and pasture, is the easiest way to make the most money on the farm. But, you say, how shall we get the steers to start with? Get one good large, well-built grade Durham cow, (if you are unable to get any more), and a few large young ewes; then get the service of a thoroughbred male, save the calves and lambs for a few years, and your farm will be well stocked with just the kind of animals that you want. But how shall we live while these flocks and herds are accumulating? Get a few good hens and a Plymouth Rock rooster, buy a setting of duck eggs and put under one of the old hens and set the rest of the hens on Plymouth Rock or Leghorn eggs. Take good care of the chicks and ducklings, and you will soon have eggs and fowls to sell and keep.

Of course a few acres of wheat and oats for home use are necessary, and a few Chester White or Poland China pigs will help along until the steers and mutton lambs are ready for market, and then you are all right. But don't try to make your pile out of wheat, beans, or potatoes, and be a little chary of the sugar beet craze. The cattle, sheep, and fowls are a sure thing; the pigs come quite handy, but the other things are somewhat doubtful. We farmers must get out of the old rut of everlasting wheat raising. Watch the markets and see what people want and try to supply the demand. Take a good farm paper, (MICHIGAN FARMER, for instance), watch the market reports, read what others say, but don't believe it all. Sift it carefully through your own brain, mix it well with your own common sense, and you will have a first-rate receipt to go by.

J. C. SHERMAN, 60 Years a Farmer.
EATON CO.

ACTINOMYCOSIS, OR LUMPY JAW.

To the Editor of the Michigan Farmer.

Will you please answer the following questions through the columns of your valuable paper:

First, Is "lumpy jaw" in cattle contagious?

Second, Is it incurable?

Third, Is there a law in Michigan compelling the owner of animals having lumpy jaw to kill such animals?

Fourth, Give a history or description of the disease—its cause, nature, etc., etc.

LAPEER COUNTY, Mich. E. A. BROWN.

To your first query we reply that the disease is contagious. It is spread through the matter, which contains fungi, being scattered over the pastures or buildings in which the diseased animals have been kept. We do not think a diseased animal will affect others until the lump begins to suppurate or discharge. But sometimes the discharge takes place inwardly, and the disease is spread to other animals before the owner is aware there is any danger.

To your second query we reply that the disease is not incurable; that when proper treatment is given as soon as the disease is discovered, 75 per cent of the animals recover.

To your third query we reply that there is a law in Michigan which compels the owner of cattle affected with this or any other contagious disease, to quarantine same at once so as to prevent their coming in contact with any other animal, and notify a member of the Live Stock Sanitary Commission of the fact that he has such an animal in his possession. The law prescribes penalties for a neglect of this duty, also for driving them over highways, or selling or shipping them to market.

In answer to your fourth query we give a description of the disease, its cause, and the remedy which has been found effective in its treatment: The disease is caused by a minute fungus, rosette-shaped under the microscope, and which is found on several varieties of grains and grasses, appearing on the beards and straw of affected plants. When this fungus finds its way into an animal's mouth, it sticks to the soft tissues, and at once begins to spread. Sometimes it finds its way into the jaw bone through a hollow tooth, and at once attacks the bone. In this country, so far as investigation has gone, the disease is largely confined to the jaw, but in Europe it frequently attacks the tongue, the lungs, and other tissues.

The first symptom of the disease to be observed is likely to be a swelling on the jaw, which extends downwards to the bone, the bone becoming honey-combed as the disease extends. At first the lump is hard, but it gradually softens, and an abscess forms in the interior which generally opens on the outside, but may also have an opening into the mouth. The tumor increases

in size, the surface becomes raw and is covered with pus, which escapes from a number of openings and constantly drops from the diseased mass.

The disease is usually of slow development, but it keeps steadily advancing until a fatal termination is generally reached if no remedy is used. The only remedy yet found efficacious is iodide of potassium, given internally. It is given in doses of 1½ to 2½ drams once a day, dissolved in water, and administered as a drench. The dose should vary somewhat with the size of the animal and the effects produced. If the dose is large enough there appear signs of iodism—that is, the system has become charged with the iodide—the symptoms of which are that the skin becomes scurfy, water runs from the eyes, there is catarrh of the nose, and the animal loses its appetite. These symptoms appear in from a week to ten days after the treatment is commenced. When they appear, treatment should be suspended for a few days and then resumed, the same dose being given as before. To effect a cure takes from three to six weeks. If there is no sign of improvement after animals have been treated four or five weeks, and the remedy has been given in as large doses as appears desirable, it is a sure sign that the animal is not susceptible enough to the effects of the drug to effect a cure, and the treatment should be abandoned and the animal slaughtered.

STOCK NOTES.

THE Maple Valley Herd of Galloway cattle and flock of Shropshires are going through the winter in fine shape. We have recently added to our flock of Shropshires, 29 choice ewes, from the well-known flocks of Gibson and Beattie, of Ontario.

FROM our old friend L. S. Dunham, of Concord, we get the following regarding his flock of Shrops: "The Shrops are just 'booming' again, and trade increasing every day. Among recent sales were five choice ewes to D. C. Delamater, of Detroit, to put on his farm near Brooklyn, making 150 breeding ewes sold since November, to go to 12 different states. Shropshire Hall is still headquarters for the breed."

DUCHESS OF CLOVER BLOSSOM 20126 earned her title by recently giving birth to two coal black Aberdeen-Angus bull calves, so near alike that they cannot be told apart. Duchess is not four years old, and she has three living calves within a year, and all less than a year old. This great heifer is full sister to Duke of Clover Blossom 22007, who was purchased by the Hon. T. C. Sherwood, after inspection, and now heads his fine herd of Aberdeen-Angus cattle at Plymouth, Michigan.

As an object lesson to those who are engaged in feeding cattle, we give the following: The white Shorthorn cow Rectiprocity, owned by W. E. Boyden, of Delhi Mills, having stopped breeding, Mr. Boyden took her to Buffalo the past week and put her on the market. She had been fed lightly for some time, so as to reduce her flesh and bring her to breeding again. But as this was not successful she was shipped and sold for beef. On the farm she weighed 1,550 pounds; at Buffalo she turned the scale at 1,520 pounds. She brought 4½ cents per pound, which netted her owner \$68.40. That is as much as a good many would pay for her if she was breeding. She has given Mr. Boyden some fine calves, two of her heifers yet being in the herd. She was taken for export. Volunteer, the Scotch bred bull at the head of the Boyden herd for several years, having been used as long as possible, was shipped to Buffalo also this winter and brought about \$75, being taken for export also. There is no inflation in these prices, and we ask if it is not time for Michigan feeders to pay more attention to the class of stock they are handling, and take means to secure cattle which, even when past their usefulness as breeders, bring more

per pound, and nearly 50 per cent more per head than the ordinary mixed stock of the State.

C. R. H., Palatka, Florida, sends the following queries: "What constitutes fancy dressed hogs, or veal calves? There is always quite a difference in quoted price from ordinary." A "fancy" dressed hog must have the following characteristics: Weight, under 300 pounds; smooth, rangy, good hams and shoulders; fine boned; cuts up with larger proportion of lean meat to fat than ordinary hogs; dresses out nice and white. Some parties pay a little more for white hogs because they think they dress out whiter than those of other colors. It is the proportion of the highest priced meat the carcass will cut which determines the price. These hogs go to the retail butcher, and he wants a large amount of rather lean pork chops, spare rib, and hams and shoulders. The lean meat must be a rich red color, and the fat pure white also. In the case of calves, about the same rules guide in the selection and price, except that the question of fat does not cut so much of a figure. In a fancy carcass of veal the lean is nearly white. The body is long with straight back, good loin, and the hind quarters well filled. The bone is fine, the rib well sprung to give a broad back, the skin soft and mossy to the touch, and the head and neck fine and showing little offal. The best cuts in veal come from the loin and hind quarters. Such cuts always sell much higher than from the fore-quarters, ribs and neck. Such calves must come from the best breeds, as calves from the dairy breeds will neither have the form, the quality, nor the size to make them desirable for either the butcher or consumer. Then they must be fed entirely on new milk, and liberally, or the flesh will become dark colored. They should be from six weeks to two months old when sent to market.

Zenoleum for Scab.

Prof. Clarence P. Gillette, of the Department of Zoology and Entomology of the Colorado Agricultural College, reports as follows on Zenoleum as a remedy for scab in sheep under date of February, 1897:

"That in a large series of laboratory experiments, Zenoleum has never failed to kill every scab mite dipped into it either in proportion of 1 to 100 or 1 to 200."

"A bunch of thirty-five lambs badly infested with scab, several with large bare patches of heavy scab were dipped two minutes in Zenoleum, 1 part to 400 parts of water, Nov. 18, and again Dec. 1, and have shown no signs of scab since."

"The dip mixes perfectly either with cold or warm water, and requires no stirring during dipping. Zenoleum leaves the wool as soft, white and oily as before the dipping, and the men like to wash their hands in it to make them soft."

Recommended by a Veterinarian.

PERRY, Mich., October 19, 1896.
In regard to your Caustic Balm, I have used it on a curb and it is the finest thing I ever saw. I took it off when another veterinary could not blister it. I recommend it to all veterinary surgeons for removing blemishes. I never saw its equal.

DR. A. L. COMPTON.

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Hood's Sarsaparilla The Best Spring Medicine and Blood Purifier. Sold by all druggists. \$1.

Hood's Pills cure nausea, indigestion, biliousness. 25 cents.

The Horse.

MAY BE ALL RIGHT IN IOWA BUT NOT IN MICHIGAN.

Wallace's Farmer recently published an article on the class of horses farmers should breed, from which we take the following extract:

"We do not care to say much to the average farmer about breeding coach horses from the fact that it is only in certain localities that the stock is at hand from which to produce them. Neither do we care much about urging him to produce roadster horses for the reason that three-fourths of the farmers do not have a taste in that direction, and if they had, do not have the time to spend in giving the training and education that the roadster horse requires in order to get out of him all that is in him. The farmer can, however, grow heavy draft horses to very great advantage. All that he needs to do is first to secure mares good enough. If he has to sell or trade two for one he had better do it. By mares good enough we mean weighing from 1,400 to 1,600 pounds, of good style, and action, and with four stout legs under them, free from blemishes, and especially free from curb or spavin, or any hereditary disease. Then mate them with a horse good enough, by which we mean one of some style, weighing from 1,800 to 2,000 pounds. If he will mate in this fashion, will take care of the brood mares when in foal, and will give the youngsters enough to eat, plenty of oats, bran, good pasture, salt, water, hay and corn fodder, with blue grass pasture in the winter, or falling that, second crop clover, he can grow horses big enough and good enough for any draft horse market in the world. There is no earthly doubt about his making money in this kind of an operation. There is money in it even at the present prices of this class of horses, and as the supply decreases the price will just as certainly advance."

While the advice given may be all right for Iowa, it is not at all suited to Michigan. Many farmers in this state have had considerable experience in raising heavy horses. The Clyde, the Shire, and the Percheron were all used, according to the ideas of those who were engaged in the business. Some excellent draft stock was raised, and at one time they sold at fair prices. But for the enormous prices paid to importers, the high stud fees necessarily charged, and the cost of growing the animals to maturity, the profits were small indeed. For many years the lumber woods offered a fair market for good draft horses, but the gradual decline in lumbering operations through the growing scarcity of pine, and the use of railways to haul logs to the mills from the woods, has reduced the demand from this source to the minimum. To-day there are only two markets open to the breeders of heavy horses. These are, first, the large cities where heavy trucking is done, and, second, the export trade. The latter is practically an unknown quantity, as not enough of American heavy horses have been sent abroad to establish market values. Still there are many who predict a good demand at fair prices for the right kind of horses of this class in the future. The only reliable market at present, however, is the demand from large cities. For really sound, good animals there is a market, of course; but it is not an active one, and, we may add, seldom is. The trouble is that when a team of such horses is purchased, the purchaser is not again in market for a long time, and naturally the demand once met, it is easy to overstock the market and reduce values.

Of all the classes of horses which are difficult to dispose of in a dull time, outside of the little measly runts and common "streeters," the heavy horse is the worst. He can only be used for one purpose, and he is not wanted for any other. Very few farmers want such teams, as they are too slow and consume too much grain and fodder for the class of work required on the farm. Taking 1,150 as the mean weight, a hundred pounds either way gives the weights farmers like best. When teams run up to 3,000 or 3,200 pounds the farmer wants to sell them, and generally does.

With a medium-weight team, or single horse, the case is different. If of good style there are half a dozen openings for them where there is one for the draft, consequently the market is more general and less liable to be overstocked. This is so in horses for export as well as in our home markets.

The coach horse or the driver with size, are good work horses on the farm, and they are freer from disease, hardier, more active, and live longer than the heavy draft horse, whose feet and legs are so frequently in bad shape.

We are quite willing to see Iowa farmers breeding draft horses. There is a demand for them, not a large one it is true, at fair prices. That state has plenty of cheap corn and cornstalks to grow them with the weights mentioned in the above extract. But Michigan farmers are differently situated. They have always bred a good class of medium, weight horses—carriage teams, roadsters and high class trotting horses. They have the pastures and grain to grow them, and have a much larger territory, both in this country and on the other side of the Atlantic, in which to sell them. The buyer comes after them. There are a dozen buyers in the State at the present time looking for them. If not high class enough for the city market, they will be all right on the farm. We think, therefore, Michigan farmers should keep right on raising

the class of horses they have in the past, only have them with more quality and style, and a little more size.

THE BLUE RIBBON MEETING.

Twelve stakes and special purses are announced for the annual Blue Ribbon trotting meeting of the Detroit Driving Club, to be held July 13 to 24, inclusive. Six are for trotters, and as many for the lateral-gaited fellows, and the aggregate of \$31,000 in addition to the regular classes for eleven days should be enough to hold up the glory of this great meeting and draw the very best horses in the country. The full list of stakes and purses is as follows:

Trotting—Merchants and Manufacturers', 2:24 class, \$10,000; free-for-all, purse \$2,000; 2:10 class, 2:27 class, three-year-olds and four-year-olds, purses of \$1,500 each. Pacing—Chamber of Commerce, 2:24 class, \$5,000; free-for-all, \$2,000; 2:09 class, 2:27 class, three-year-olds and four-year-olds, purses of \$1,500 each.

In case of any surplus in these stakes, the amount beyond \$10,000 and \$5,000 respectively, will be divided among the winners of the main stakes in accordance with the percentage of the stake money.

The entries will close on April 1, when the horses must be named. The entrance fee is the customary five per cent, which was inaugurated by the Detroit Driving Club, and the payments are one per cent on April 1, May 1, June 1, and two per cent on July 1. Upon the payment of 2½ per cent additional by July 1, nominators in the big stake will have the right to substitute in the place of the horse named any other horse in the same class at the date of the closing of the stakes.

The two free-for-all events are mile dashes in the main events, the winners receiving \$800. The balance of these purses will go three ways to winners of heat races among the others starting in the main races.

The Merchants' and Manufacturers' stake will be divided, as for several years past, and the main stake will be \$8,000, with a \$2,000 consolation for those not receiving money in the main event. Good trotters are always held back for this event, and with the interest manifested in the new grand circuit there will doubtless be fully twenty nominations.

HORSE GOSSIP.

THE Port Huron Driving Park Association has decided to hang up \$15,000 in purses for two race meetings the coming season.

At a sale of light harness horses held at Cambridge, Ind., the pacer Coastman, 2:08½, with trial in 2:05, was sold for \$1,200. Even great speed is cheap.

The law authorizing pool rooms in Kansas has been declared unconstitutional—as it ought to have been. The court held that it was class legislation.

The representatives of four agricultural societies, which compose the Western Massachusetts and Eastern New York Trotting Circuit, have agreed to continue the circuit another year.

At a sale of trotting horses at Richmond, Ind., on the 10th inst., the horse Jack Spratt, three years old, record 2:18½, was purchased by M. Shawn, of Grand Rapids, this State, for \$700.

A few weeks ago 87 head of horses from Lexington, Ky., all with records of 2:18 or better, were shipped at New York on the steamship Prussia, for Vienna, Austria. They were valued at \$97,000.

It is reported that 180 American horses were lost when the steamship Angloman was wrecked on the English coast, seven hours run from Liverpool. The loss was partially covered by insurance.

EUROPEAN exchanges note the safe arrival in Vienna of seventeen American trotters, all in good shape. Vienna seems to be the great trotting center of Europe at present, and American horses are the greatest favorites.

WHILE cantering on the Brooklyn track recently, Handspring stumbled on the turn into the stretch and turned a complete somersault. He got up, however, and showed not the least injury from the accident. The same horse fell at almost exactly the same spot about a year ago.

THE Pinckney, Mich., Driving Club has decided to build a half mile track this spring. The officers of the Club are as follows: President, John J. Teeple; vice-president, Henry B. Gardiner; treasurer, Herman H. Swarthout; secretary, E. M. Fohey; directors, Stephen G. Teeple, James Harris, Francis Reason and Albert Monks.

ACOLYTE, the famous Onward stallion which General Coxey rode to Washington, has been sold by Geo. H. Watson, of Frankfort, to F. D. Wilson, of Punxsutawney, Pa., for \$3,000. The horse was sold to Coxey by R. P. Pepper for \$50,000, and after \$25,000 had been paid on him he fell back on the Pepper estate. At the Pepper sale he was sold to A. H. Moore, of Colmar, Pa., for \$5,000, but Moore refused to take him, and he was again sold at public auction and purchased by Watson for \$1,000.

It is reported that the sale of the Thoroughbred Stud Book by Colonel Saunders Bruce to the Jockey Club for \$35,000 has been declared off. Accordingly, breeders are in a worse quandary than before as to the proper recipient for the registration of foals and pedigrees of horses and mares yet unregistered. It looks to us as if the Jockey Club is trying to get ahead of Col. Bruce, as he has started suit against them for

breach of contract. For a great many years Col. Bruce published the Stud Book at a loss. Without his enthusiasm and hard work the records of American thoroughbreds would be about as reliable as Indian legends. Now, when his work is receiving its just reward, the Jockey Club, composed of wealthy men, wish to control it, but want it on their own terms.

THE summer meeting of the Detroit Jockey Club is scheduled for August 10 to September 2, at the Grosse Pointe track. The entry list has been published, and is not only large in numbers but includes most of the high-class horses now in training in the west and south. The entries for the several stakes foot up as follows: International Derby, 86; Campau stake, 84; Hotel Cadillac stake, 49; Dominion steeplechase, 24; Street Railway stake, 53; Hotel Normandie stake, 56; Wayne Hotel stake, 65; Voigt Brewery Co. stake, 44; Sensation stake, 19; Derby for 1898, 57; Campau stake for 1898, 49; Total, 586. Two events, the International Derby and Campau stake, closed last spring, and seven of the 1897 stakes, together with the fixed events for 1898, on February 20 last.

A NEW trotting horse association, to be known as the International Horsemen's Association, was organized at Chicago last week. It will take the place of the Northwestern Breeders' Association, which has passed out of existence. The plans of the organization presented included a constitution and by-laws providing for an annual meeting in Chicago, and defined the objects of the organization to be in the interests of trotting horsemen, the objects to be the improvement of the trotter and pacer, the protection of the breeder, owner, trainer and driver of the light harness horse and the preservation and advancement of their legitimate interests in all branches of the business. The following officers were elected: President, Thos. H. Gill, Milwaukee; first vice-president, James Golden, Medford, Mass.; secretary, J. E. Corrigan, Milwaukee; treasurer, Will J. Davis. Vice-presidents were elected from a large number of states, Wm. K. Pruden, of Lansing, being elected from Michigan.

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Nine stallions for sale, five imported and four American bred. Six Black Percherons and two imported French Coach. For further description, address THOMAS CROSS, Bangor, Mich.

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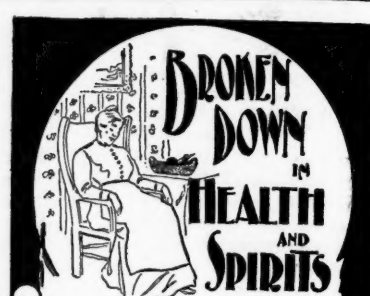
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The Poultry Yard.

For the Michigan Farmer.
HIS IDEA OF A PRACTICAL HEN-HOUSE.

I have been trying for some time to find an improvement on my chicken house, and I send you a plan of one which I think would answer. Will you, or some of the readers of the FARMER, tell me if they think it will be all right.

The house is 30 feet long, by 10 feet wide; height—front, 9 feet; back, 6 feet. The small room, 7 by 8 feet, is the laying room, to which there are three entrances. The roosting room is 10 by 10 feet. The scratching room is 10 by 13 feet. The squares marked in the laying room represent nests, which are fixed on shelves, and movable.

DICKINSON CO., Mich. SUBSCRIBER.
[The plan given appears simple and practical. It will require more lumber than if built nearer-square. There is one point in which we think a change could be made in this as in most houses with advantage. The hot suns of summer, beating on the roof, make them uncomfortably warm, and it requires half the night to cool them off sufficiently to make them comfortable for the fowls. If there was a second roof of plain boards, leaving a dead air space between the two, this would be obviated, and the house would be more comfortable, both in summer and winter.—ED. FARMER]

For the Michigan Farmer.
WHY I RAISE TURKEYS.

I saw in the MICHIGAN FARMER of Feb. 27th, Orville Jones' reasons for not raising turkeys. Well, I would like to say, suppose each of us says I will not raise turkeys because they are too cheap, or I will not raise this or that because it is cheap. I think we would be like the person referred to in a passage of scripture that comes to my mind: The sluggard would not plow because of the cold, and in harvest begged and had nothing. I have, or, I had better say, my wife with a little of my help, has raised turkeys for fifteen years, and has not sold at less than seven cents per pound, and thirty or forty turkeys that will average fourteen or fifteen pounds, at seven cents, will bring in quite a little pocket change. Of course, turkeys, until they get to be six weeks old, take quite a lot of care, but after that, if they are fed twice a day, will care for themselves. I admit they will wander some, but if fed well it is insects they are after, not grain. Almost any neighbor would be too glad to have the many injurious insects caught if it did take a turkey to do it. We wonder if Mr. Jones has, every afternoon, gotten quietly over the fence and "shooed" honey bees from his neighbor's clover. Queer neighborhood that.

GREGORY, LIVINGSTON CO.

For the Michigan Farmer.
SOME THOUGHTS ON THE BUSINESS.

If a person was going into the poultry business for profit and had read the FARMER during the past few weeks he would undoubtedly have felt well paid for so doing. We are working in the poultry industry just a little and have received valuable help from those who have had experience in that line.

Each writer has a good practical way of arranging his houses, perches, etc. One says: Have the perches on hinges so they can be raised and lowered to suit the manager; another in "Hard times henhouse" says, have an aisle run through the center. All the ways are good, but what of a combination of them all into one. For instance, in that part of the house where the hens were to roost have the perches on hinges, half on one side and half on the other with an aisle through the middle. We intend to fix ours in this way when we get a little spare time.

We built a scratch room to our henhouse this winter 8x10 feet, using old lumber which had been piled up for wood. It is not exactly a "thing of beauty" but the fowls seem to enjoy picking their food out of the clover chaff in this room.

We go into the henhouse after placing the feed in the scratch pen and drive all the chickens into this feeding room. If some happen to be roosting out of place and are up above we usually throw cobs, corn in the ear, or something equally as "light" and "soft" at them until they retreat to the other room.

It was only a few years ago that the hen was not thought much about. In fact, she was one of the things that required no skilled attention. The house (if any) was located where it would be most out of the way, and cleaning day never came, for it was easier to move than clean.

Eggs ran up to an enormous price during the winter months in those days. To-day the price is more equalized, for a certain class of farmers have found it to be more profitable to have their hens lay eggs in the winter than summer. We have never been quite satisfied with what our hens have done in the winter, but another year we hope to plan a little better and perhaps realize better results.

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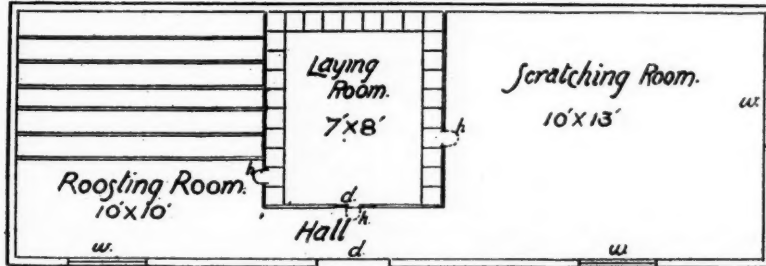
E. F. BROWN.

POULTRY NOTES.

A recent number of the *Poultry Keeper* gives some good advice in regard to improving common flocks: "How to make a good cross for farmers' purposes," it says, "must be learned from the agricultural papers entirely, for crosses are ignored by those who breed fancy poultry." It might also be added that the subject might very well be left alone by many of the agricultural journals, for the little information some of them give is of little practical value.

The cross recommended as one of the best is a Brahma or Langshan, followed by a Houdan, Wyandotte and Plymouth Rock or Leghorn, in their order. Pure males are used in all cases and are bred to pullets.

The first cross is a good one for common flocks. The Brahma is one of the old reliables and is to be found nearly everywhere, but the Langshan is not yet evenly enough distributed to be easily procurable.



South side.

A PRACTICAL HENHOUSE.

The Houdan is an excellent fowl, but is not intended for this climate. It requires too much care, and is not fitted for taking the chances with common fowls. Its crest catches too much snow and sleet.

If we were keeping fowls for eggs we would prefer not to wait till the fourth cross for an infusion of Leghorn blood. We would rather place it second, or follow the Brahma with a Wyandotte and then a Leghorn. The benefits derived from the Wyandotte would be compactness, yellow skin and legs, and good laying qualities.

It might naturally be supposed that the breeds quickest to grow feathers would be the strongest chicks, but such is not the case. To supply the nitrogen, lime and phosphorus necessary is a severe task for the fowl and renders it an easy prey to disease, especially indigestion and leg weakness, also to lice. Bone and animal foods in some form are of great value as a preventive.

The nineteenth century microbe goes everywhere. It even gets into eggs. At least that is what they say in France. A parasite has been found, a kind of fungus, which grows in the nest of the sitting hen. It penetrates the shell and destroys the germ of the egg, when the old hen will probably be blamed because the hatch is poor. It even works its way through the fowl and spoils the egg before it is laid, which is an underhanded way of doing things. It seems that nothing can escape the ravages of modern science. It looks as though the microbe were destined to possess the earth.

In New York city "stamped eggs" are beginning to play an important part in the trade. The eggs are stamped with the name of the producer and supplied direct to the consumer. During the winter some of them bring as high as seventy-five cents per dozen, and fifty cents during the spring and summer. But this is only the cream of the trade.

So far as we can judge at present there seem to be fewer going into the chicken business this spring than for several seasons. This is a good sign. Too many have gone into it without knowing what they were doing. They are frequently of that class who must learn by experience. "If I were on a farm," a man remarked in our presence lately, "I would keep flocks of a hundred hens each." Fortunately he did not live on a farm, or his chicken theories would have led him into trouble. This is one example of many. He had read of the marvelous success of those who had raised poultry. It looked easy, and he had taken for granted that it was. We advised him to begin with two. After he had studied their natures for a year he might venture to increase the flock, and in course of time he might be able to keep a thousand, though flocks of that size are very rare.

One trouble with the poultry business is that it is too easy to make a beginning. The enthusiast gets a few hens, sets eggs and trusts to luck for the future. By fall the craze may have spent itself, provided the eggs did not hatch well or chicks died fast enough during the summer. Now and then there may be one who can succeed by starting on a large scale, but the majority must live and learn.

It is remarkable advice that we sometimes see going the rounds of the papers. Somebody has lately found that hens will eat the meats of the walnut. He is now advising those who keep poultry to crack the nuts for the fowls. A bushel of the nuts, shucks and all, are claimed to be

worth several times as much as grain. This may all be true, but we would rather leave the proof to someone besides ourselves. That kind of food would need to be valuable indeed to pay the first cost, besides the trouble of preparing. After a person had tried cracking nuts for a hundred hens he would probably be ready for a food more easily handled.

At this time of year many people are asking themselves if it will be best to raise turkeys the coming season. With some the answer should undoubtedly be yes, with others as emphatically no. There are people who find a profit in the fowls at seven cents a pound, but such a price is not very encouraging. Much depends upon the flock. Some turkeys rarely wander off the farm. They are contented with the home supply of grasshoppers and crickets. As insect destroyers they are worth all the expense and trouble they cost. Other flocks are not contented anywhere. They are determined to run away, no matter how well cared for at home. This is a characteristic which seems to be inherited. If a flock is of the right kind it is profitable, otherwise it might better be disposed of.

This is something which receives little attention from breeders. The attention is given to size and early maturity to the neglect of disposition, but when it comes to keeping the flock out of a neighbor's cornfield the latter is of no small importance.

After all the talk about the laying qualities of different breeds it is a relief to read the following opinion in the *Poultry Keeper* regarding the relative merits of Hamburgs, Leghorns, Wyandottes and Rocks. "We do not believe there are five eggs difference between them in a whole year, sometimes one and sometimes the other excelling." The difference is more in the management than in the breed. F. D. W.

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All communications relating to the organization of new Clubs should be addressed to F. D. Wells, Rochester, Mich.

THE MORTGAGE TAX LAW.

On page 206 of the MICHIGAN FARMER of March 15th, Mr. Helme, a correspondent, raises the following objections to our editorial of March 6th, on "The Mortgage Tax Law":

1. That we erred in stating that banks pay taxes on personal property.
2. That we erred in assuming that banks would profit by a mortgage exemption law.
3. That we stated that an increased tax on real estate would impose greater burdens upon the farmers than upon anyone else.
4. That we erred in stating that the money loaners are urging the exemption of mortgages.

Our reply must be brief, but we shall try to make it satisfactory.

As to objections one and two we have this to say: Banks do pay taxes on personal property. Sec. 46 of the Tax Law provides that shares in banks shall be taxed to shareholders, but it requires the banks to pay the taxes. Corporate banks pay taxes on their entire capital stock and surplus, not otherwise taxed as real estate, 3208/8, How. 3.

We thoroughly understand that the bank pays these taxes for its stockholders who own the bank, but it is the bank and not the stockholder that pays the taxes, and the bank, and not the stockholder, that must be sued for the taxes in case of non-payment. Suits were brought only last week by the city of Lansing to compel two of the defunct banks to pay the last assessment of taxes upon their capital stock and surplus. We did not claim that banks whose capital is represented by shares of stock, pay taxes on their mortgages, neither ought they so to do. The only property owned by such banks, over and above their indebtedness to depositors, is represented by their capital and surplus, and upon these they are taxed.

Other banks are taxed upon their mortgages. The law is plain. Every bank whose capital is not represented by shares of stock, and every private banker, shall make out and deliver to the assessor a statement, which he shall verify by oath, showing the amount of money on hand and in transit; the amount of funds in the hands of other banks, bankers, brokers, or other persons subject to draft; the amount of checks and other cash items not included in either of the preceding items; the amount of bills receivable, (including mortgages), discounted or purchased, and other credits due or to become due; the amount of bonds and stocks of every kind, (except United States bonds), and shares of capital stock of corporations or companies, held as an investment, or in any way representing assets; all other property appertaining to said business other than real estate; and the description and value of all real estate owned by him or them. From the total of the above shall be deducted the amount of all deposits made with them by other parties, and the amount of all accounts payable, other than current deposit accounts, and the remainder shall be assessed as monies. Such banks and bankers did obtain exemption under the law of 1891.

What we did claim, and what we still claim, is, that if mortgages are exempted from taxation, all banks which have their capital and surplus invested in mortgages will obtain exemption from the tax which they now pay. "Why do we think so?" For the reason that even now banks, not national banks, obtain similar exemption for that portion of their capital and surplus which is invested in non-taxable United States bonds.

We are not defending the present law as perfect. We believe it should be so amended as to uncover every mortgage in the State, and if possible release every mortgagor to the amount of his mortgage. But that is not the issue. The question before the legislature is bluntly this, Shall mortgages be taxed? And when Mr. Helme urges in support of the repeal of the present

law that at present banks are exempted from taxation, he errs in his presentation of facts. Except farming property no class of possessions is taxed more nearly at its actual value than the property of banks. And the repeal of the mortgage tax law as it has already passed the Senate would, in a great measure, relieve banks of all taxation.

As to objection three, the gentleman is mistaken. He will find no such statements nor any such implication in the editorial. However, it is a fact that farming lands are assessed very much higher in proportion to their true value than other real estate.

With regard to the fourth objection, we still have good grounds for believing that the money loaners are behind the measure. We did not, and do not, assert that others are not pushing it for them, or lobbying for the measure. Neither do we claim that certain borrowers might not be benefited. But we do claim that the money loaners are the original movers in the matter and the real power behind it, and that the average borrower would not find his interest rates reduced, whereas his taxes must of necessity be increased.

If Mr. Helme, and the others supporters of the measure, really wish to help the borrower directly, why do they not propose to exempt the farms of Michigan from taxation? In other words, Bring your gifts to the debtor directly, instead of passing them through the fingers of the creditor first.

But we do not believe in that sort of thing, neither do the farmers of Michigan. The principle is entirely wrong. Exempt mortgages, and money will be cheaper, Mr. Helme says. Why not also say, Exempt shoe factories, and shoes will be cheaper. Exempt railroads, and freight and passenger rates will be cheaper. Exempt farms, and farming products will be cheaper. Exempt everything and everybody, and verily all will profit thereby. The one proposition is as disreputable and unjust in principle as the other, and no more so.

Again we say, Let no class be exempted. Let there be no classism in taxation.

THE MORTGAGE TAX LAW DISCUSSION.

Our editorials of February 27th, and March 6th, have had the desired effect of stimulating general public discussion of the points involved. They have been widely copied and commented upon by the newspapers of the State, and we have received no less than ten commendatory articles and two adverse articles for publication in this department. It is also pleasing to note that the general newspaper comment upon the subject is favorable to the ideas expressed by us.

As to the commendatory articles sent us for publication, although they are of great merit and would be of practical value in this discussion, yet from lack of space we are forced to indefinitely postpone their publication. We make the statement with sincere regret but, as previously announced, the club reports take precedence over all other matter. We thank our friends for their support in this fight for equal rights for all and special privileges to none.

As to the two adverse articles, one appeared in full on page 206, of last week's MICHIGAN FARMER, and we reply to it in this issue. The other will appear in a subsequent issue if space permits.

LEGISLATIVE NOTES.

The cost of printing the reports of the State Tax Statistician for 1896, was \$4,895.

The appropriation bill for the School for the Blind passed the House at \$56,000 for two years.

Let the House postpone consideration of the mortgage tax law until the people can be heard from.

The Agricultural College appropriation bill as passed by the House was in accordance with the estimates of the State Board of Agriculture. It provides \$11,000 a year for the institution. It is the smallest appropriation ever asked for.

Taxation must be decreased. Let no worthy State institution suffer, but hold every one of them down to a hard times basis. This is no time to enlarge the scope or to increase the number of such institutions. The people are insistent on this point.

The Senate by a vote of twenty-two to ten favored the repeal of the law tax-

ing mortgages. The ten senators who favored taxing mortgages were Messrs. Blakeslee, Bostwick, Campbell, Covell, Flood, Merriman, Teeple, Waggar, Wagner and Preston. All the others voted for mortgage exemption.

Appropriation bills as introduced are in the aggregate much higher than the appropriations of two years ago. The legislature must be just to the people. These appropriations must be cut down, and it must be done where the least real injury will result. The people cannot and will not endure increased taxation.

Shall the best paying property in Michigan to-day be exempted from taxation and its share of the burden shifted onto the real estate already overtaxed? The Senate says, Yes, by a vote of twenty-two to ten. The House is yet to vote upon the question. Let your representatives hear from you by personal letter.

TO EVERY FARMERS' CLUB IN MICHIGAN.

A request was lately made, through this department, that every Farmers' Club in the State would at once communicate to their members in the State Legislature, their wishes as to the action they desire them to take, in dealing with legislative measures. Has every club responded to this request? It is earnestly hoped that every club has taken action in this essential and important matter.

It should be remembered that the State Association can but outline and suggest, and that the power to compel right action, through expressed public sentiment, emanates alone from the local clubs. Then if there is a failure to secure, from the legislature, such legislation as Farmers' Clubs desire, the responsibility must, in large measure, rest with the local clubs. Let, then, resolutions, petitions and personal letters to your members in the legislature be sent forward promptly, freely and in great numbers.

The officers of the State Association desire, most earnestly, your co-operation, without which the Association is nearly powerless to secure the desired results. Therefore do not wait for a meeting of your club, but let two or three of the active members of each club draw a petition, expressive of the sentiments of the club, and promptly and fully circulate the same for signatures, then forward it promptly to your members in the legislature.

J. T. DANIELLS.

THE MORTGAGE TAX LAW.

I notice the usual effort is being made in the present legislature, in the interest of wealthy owners of credits, for the enactment of a law exempting mortgage credits from assessment for taxes.

Although this bill is getting to be something of a chestnut, yet as so few seem to realize its full ultimate effect, which would simply be to strike from our tax rolls not only mortgage credits but all credits and monies, including all bank stock of our State banks, it is quite possible at any time to be enacted.

It strikes me that farmers, property owners and all who favor fair dealing should wake up to the fact that class legislation of this kind is a bold move in the direction of further depreciation of property values and enhancement of the value of money.

Single out any portion or class of property, enact that henceforth it shall be exempt from assessment for state, county, school and municipal taxes, and consider the added value to the property and the munificent gift to the owners.

And, if changing other credits and credits secured by mortgage would give them the same advantage and added value, which it of course would, the mortgage indebtedness of Michigan would double at once.

The claim is made that but a small portion of the total amount of mortgages legally assessable are found on the assessors' books.

I have paid considerable attention to assessing for many years and know this is not a fact, at least to any greater extent than some other classes of property.

I believe that the stocks of merchandise throughout the State escape taxation to fully the extent of real estate mortgages.

Detroit papers give what purports to be the total amount of mortgages taken from their county registry, and also the total amount assessed in that city, which necessarily is much less.

Giving these amounts without further explanation, and inferring that the whole amount shown by the records is legally assessable, shows a lack either of information or honesty.

The county records show the full face amount of the mortgage when given, whereas a majority have been in part, and some nearly all, paid, but the payments do not show on the records.

Also a very large share of the mortgages recorded in the register's office of any county in the State are owned by our State banks and are not, under our present tax law, assessed, but the shares of stock of the banks are now assessed in their place.

Under the proposed law neither the

mortgages nor the bank stock (State banks) would be assessed, as the real estate mortgages held by these banks fully equal their capital stock.

Under the mortgage exemption law of 1891-93 such was the case and would necessarily be under any law exempting mortgage credits.

Money is assessed only in the form of credits, and the class of credits most easily located by the assessor are real estate mortgages.

Exempt these from assessment and you have in effect taken from the tax rolls all monies and credits, and to that extent you have increased the tax on all other property.

Re-enact the mortgage reporting law of 1887, add to our present tax law a provision that the assessor shall, at the time of making assessment, place all property owners under oath, and little complaint will be made of property escaping assessment.

TAXPAYER.

REPORTS FROM LOCAL CLUBS.

TECUMSEH AND FRANKLIN FARMERS' CLUB.

The last meeting of the club was held at the home of Martin Updyke, February 19th, with a large crowd present. The president read a short article from the MICHIGAN FARMER urging farmers to organize. A good program followed.

The question, Is the good roads league the best thing for the farmers? was opened by Chas. Mathews. He thought the league was inaugurated by the wheelmen for their special benefit, and that the league only intended to improve the main roads and those leading into the cities. The present system of working the roads is all right if the laws were only more rigidly enforced.

Mr. Aylesworth also said that the law is all right if enforced. As it was then late no one else discussed the question, but it was the general opinion of the club that it would be best for the farmers and people in general to continue the present system.

The meeting then adjourned for two weeks to meet at the home of Albert Haire on March 5th.

ELLA M. MUNGER, Sec'y.

THE OLIVE BRANCH FARMERS' CLUB.

The last meeting of the Olive Branch Farmers' Club, held Saturday, Feb. 27th, at the home of Mr. and Mrs. R. K. Divine, was not so largely attended as usual, owing doubtless to the severity of the weather. Aside from the general February program, Mr. R. K. Divine as crop reporter gave way to Major H. E. Light, who read a carefully prepared paper on the subject, "Has the use of American silver in foreign markets, since demonetization, been fatal to the prices of agricultural products?" This elicited a vote of thanks to the reader.

The club then entered on the discussion of the question, "Would restriction of immigration affect farmers and farmers' wives disadvantageously?" The members, in participating quite generally in the discussion and reporting their experience, seemed to be of the opinion that whereas they used to think that if they wanted good help they should get Germans or foreigners, they would now prefer American help. Their general sentiment seemed to be that they were in favor of immigration if we get the good sort of people thereby, but they were not in favor of promiscuous immigration with all its attendant financial, social and moral evils. Mr. R. K. Divine, having introduced petitions to be sent to the legislature, it was voted that they be signed by the acting president and secretary as adopted unanimously, they relating to the following matters: appropriation of \$6,000, for traveling library; continuance of the office of State Statistician; coloring oleomargarine; prevention of appeals from justice to circuit courts when not more than \$50 is involved; appropriation of \$6,000, for Farmers' Institutes; payment of salaries to county officers, and all fees to go into the county treasury. The invitation of Mr. and Mrs. Arthur Hadley to the club to hold their next meeting with them, the fourth Saturday in March, was accepted. The question then will be, "Do we as farmers and citizens look after our affairs, public and private, as we should?" Three new members were received. The meeting closed in due form, and the members dispersed to their homes with the feeling of having been privileged to have been present on what had proved a very enjoyable occasion.

REPORTER.

COE, CHIPPEWA AND LINCOLN FARMERS CLUB.

In the southeastern part of Isabella county there is a farmers' club two years old, known as the Coe, Chippewa and Lincoln Farmers' club.

It is alive and doing business, although it has never been reported to the MICHIGAN FARMER, the best paper on earth. It never fails to meet the last Thursday in each month. Haying, harvesting, rain or mud never interfere with its meetings.

The last meeting was held with our President, Mr. Chas. Hudson. It was a grand success, both as to numbers and enthusiasm, about eighty persons being present.

Mrs. Hudson's paper, "A proper education for farmers' daughters," was excellent. It was so good that a rising vote of sanction was given it instead of discussing it.

The study of the proceedings of the Board of Supervisors for the past year, as suggested by the FARMER of January 23d, was taken up and discussed.

A. C. Rowland, supervisor of Lincoln township, was assigned the first three subdivisions, and James W. Moore, an ex-supervisor was assigned the last three subdivisions. The fourth, fifth and sixth subdivisions were given to E. A. Salisbury, one of

the Superintendents of the Poor and an ex-supervisor.

As Mr. Salisbury was absent, Mr. Row-lader discussed the first six subdivisions and Mr. Moore the last three.

Oliver H. Adams, supervisor of Coe township, also offered valuable suggestions. Many questions were asked and much interest taken in the study of the subject.

A rising vote showed all present to be in favor of the passage of the Kimmis bill in regard to the salaries of county officers.

The meeting adjourned to meet at the home of Mrs. Daniel Childs, the last Thursday in March, which is the day for our annual election of officers.

The study of the proceedings of the Board of Supervisors was very educating to many, and hereafter the proceedings will be more attractive.

In conclusion let me say we belong to the State Association of Farmers' Clubs, and sent two delegates last year, also two delegates this year, and will attend the Round-up at St. Louis in March.

ALFRED C. ROWLADER, Cor. Sec'y.

SANDSTONE AND BLACKMAN CLUB.

The February meeting of the club was held at the home of John Vedder, and a large number were present. Several new members were admitted.

A resolution passed unanimously recommending the passage of the Kimmis County Salaries Bill, and a copy was forwarded to the legislators representing the territory the club covers.

Messrs. C. I. Moe, W. H. Warner and A. Avery were appointed a committee to draft resolutions to be voted on at the next meeting regarding the advisability of building a new court house in Jackson county.

The program committee reported as follows: Association question for March, topics 1, 2 and 8 to Chas. Cochran; topics 3, 4 and 5, to N. I. Peterson; topics 6, 7 and 9 to E. C. Wilcox, the plan given in the MICHIGAN FARMER of January 23d being followed for the study of the proceedings of the Board of Supervisors. It is hoped that every person in the club will inform himself or herself before the meeting upon this question.

Dr. and Mrs. Grant were appointed delegates to the Farmers' Institute to be held at St. Louis, Mich., March 2-5.

The topic assigned to A. Avery, "Shall every third question sent out by the State Association be one in which the ladies are specially interested?" was opened by that gentleman in a witty speech, and considerable discussion followed. A vote was taken resulting in favor of the affirmative.

In a talk on "Rotation of crops," Dighton Herrington recommended sod ground for corn, beans or potatoes, following corn with oats, oats with wheat, and then seedling down to grass or clover, summer-fallowing previously if necessary. Others recommended some changes in this plan.

The question box brought out a question relating to clover upon which opinions were expressed that from four to six quarts to the acre should be sown any time from the last of February to April.

The next meeting of the club will be held with Mr. and Mrs. Abram Avery on March 20th.

F. E. DANIELLS, Cor. Sec'y.

FULTON CENTER FARMERS' CLUB.

The above farmers' club met at the home of Nathaniel Walker on March 4th.

After the usual opening exercises, we listened to a paper by Israel Lewis; subject, "Pure Water a Necessity." The paper was very interesting and brought out a lively discussion.

A short account of the institute held Tuesday and Wednesday was given by Geo. Long.

The following resolutions were then adopted:

Resolved, That we, members of the Fulton Center Farmers' Club, consisting of thirty-five members, do earnestly request the legislature to pass House bill No. 198, file 55, known as the Kimmis Bill relating to the salaries of county officers; and be it further

Resolved, That we, members of the club, do think it to our great disadvantage to give in crop reports to our supervisors, and that we as members of said club hereafter will not give in such reports to the supervisors; and further

Resolved, That we, members of the Fulton Center Farmers' Club, do not favor any change in the highway law relative to the good roads movement, and be it further

Resolved, That we, members of said club, do favor a reduction in the payment of the Board of Supervisors from three dollars per day to two dollars per day for their services while in session.

Committee, Joseph Foster, O. N. Chaffin, Chas. Dodge.

The above resolutions brought out a lively discussion that was participated in principally by Supervisor Smith, of Washington township, Joseph Foster, Geo. Long and John Price.

Meeting adjourned to meet at Joseph Foster's, April first.

J. N. HOWE, Cor. Sec.

WALLED LAKE FARMERS' CLUB.

This club met March 3d, at the residence of Mr. and Mrs. A. E. Green, and had one of the best meetings of the season.

Mr. T. C. Severance, Jr., brought out, in a paper, the fact that other classes, by means of thorough organization, are able to regulate their own wages and the price of their produce; and that, though inferior in number, they are superior to farmers in social and political influence. He said that farmers must learn from other classes, and become able to regulate their output just as completely as do others. That farming can be made so scientific that farmers can figure up their crop in bushels just as soon as they have settled upon the number of acres to put in. This point must be reach-

ed before farmers can regulate the price of their produce.

In discussing the Kimmis Bill, T. C. Severance, Jr., held that the surest way of correcting the salaries of our county officials was to fill the positions with men who have the interests of their fellowmen at heart, rather than with men who are after the salary, and that only.

James Dodge held that even with the intended change, the officers would find some way by which they could get the usual amount out of the taxpayers.

Mr. Crosby, of the State Grange, favored the bill because it will at least bring out the amount of fees received by the different officers.

In the discussion of the question as to whether or not the farmers' clubs should join the State Grange, Mr. James Dodge favored the question, as the Grange is a well established organization, and is not only state but national in its organization.

Mr. Crosby, on the other hand, held that the clubs should be kept separate and used as a stepping stone, a preparatory school, so to speak, in which farmers may take the initiatory step in the work of organization.

HOWARD SEVERANCE, Cor. Sec.

TECUMSEH FARMERS' UNION.

This club met at the home of Mr. and Mrs. L. H. McConnell, on the evening of March 5th. After the usual opening exercises the club was entertained with a literary program.

The question, "Money and its Functions," brought many members to their feet, and they engaged in a lively discussion till near midnight.

The club will meet next at the home of Mr. and Mrs. Holdridge.

L. H. McCONNELL, Reporter.

WEBSTER FARMERS' CLUB OF OAKLAND.

With the assistance of Secretary Wells of the State Association, a few farmers and their families met for the purpose of organizing a farmers' club in what is known as the Webster district. Of course the club must be called Webster, too, but on investigation we found there was a place in Washtenaw Co by the same name, also a club. So we concluded to call ours Webster of Oakland.

The day was bad and we organized with only fourteen members. We held our first meeting the first Wednesday in March, at the home of Mr. and Mrs. N. C. Elwood, with an attendance of seventeen and a promise of more in the future.

After the usual preliminaries were gone through with, the question for discussion was brought up, "What is the best time and manner of sowing cloverseed?"

There were as many opinions as there were people to discuss it. One man said he had spent as high as twenty-five dollars a year for cloverseed and lost it all. This year he proposed to try a new plan; that is, fit the ground for cloverseed just as he would for any other crop, instead of seeding with other crops.

A short literary program and a question box were enjoyed by all.

The question for our next meeting is, "How to raise potatoes successfully." The meeting adjourned to meet the first Wednesday in April, at the home of Mr. and Mrs. Thomas Seamark.

MRS. THOMAS SEAMARK, Cor. Sec.

PUTNAM AND HAMBURG CLUB.

This club met at the home of Mr. and Mrs. Thomas Sheahan, February 27th, with seventy members present.

Mr. C. W. Brown gave an interesting talk on new business for the club with regard to buying directly from the manufacturer.

An interesting paper on "Housekeeping" was read by Miss Nettie Hall, which brought out sharp pointers from some of the ladies.

After a thorough discussion of this subject, the club took up the question, "Farm Statistics."

President Lambertson thought if they were not a benefit to the farmers they should be abolished.

Messrs. G. W. Brown, E. W. Kennedy, Fahey, Campbell and C. W. Brown thought them a benefit to the farmers; whereas, Messrs. Weller, Lake, Egan, T. Sheahan and W. T. Sheahan would have them abolished.

After the closing exercises the club adjourned to meet with Mr. and Mrs. Erasmus Kennedy, March 27th.

J. T. CHAMBERS, Cor. Sec.

MARION FARMERS' CLUB.

The seventy-five members and friends of the Marion Farmers' Club who braved the snow and cold of February 26th, met at the home of Willis H. Smith, and were cordially welcomed by the good host, his wife and daughter.

In the absence of the secretary, the assistant secretary read a letter from State Association Secretary F. D. Wells, saying that the support of the local clubs had been requested by A. N. Kimmis in behalf of his County Salaries Bill. After an animated discussion leading to a clean understanding of the bill, a motion was unanimously carried by which the acting secretary was instructed to send a resolution to each of our representatives in the State legislature—Hon. George W. Teeple and Hon. Freeman W. Allison, requesting them to use every honorable effort to secure the passage of said Kimmis Bill.

Acting upon appointment at the last meeting, Frank Backus, Coral Brew and S. K. Beach had drafted a bill to present to the State Legislature repealing the present system of county supervision of schools. The bill was tabled, as the time for presenting bills in the legislature had expired.

The speaker who opposed the present system said that the commissioner of schools should be required to make quarterly reports of schools visited and time spent in his official work, to the chairman of the Board of Supervisors or some other author-

ity within the county, as well as to the superintendent of public instruction.

He should have a fixed salary, and be required to turn all examination and Normal School fees into the county fund. He should give his undivided time and energy to promoting the welfare of our common schools, and not be allowed to take extra work, such as being treasurer of some village or city.

The next speaker favored the present law; could not see why a man could not be treasurer of a small village like Fowlerville and Commissioner of schools if Mr. Pingree can be governor of the State of Michigan and mayor of the city of Detroit. He would, however, do away with third grade certificates, as a teacher who gets a first grade certificate will probably teach a second grade school, and one with a second grade certificate will be a third grade teacher.

Mr. Albert Tooley, President of Genoa Farmers' Club, being urged by the president to make some remarks, said he was glad to be present and see so much interest; was glad to hear the school system discussed; gave a brief report of the meeting of the State Association which he attended last winter.

The members have an early dinner at home, and try to meet promptly at twelve o'clock and spend the greater part of the afternoon in discussing the proceedings of the legislature, with now and then a paper or recitation as a diversion and a rest.

The next meeting will be held at the home of Mr. and Mrs. Frank Backus.

REPORTER.

ODESSA FARMERS' CLUB.

On March 6th, 1897, the club was entertained at the pleasant home of Mr. and Mrs. O. G. Bretz.

The State question was first considered by the gentlemen present.

H. E. Curtis then presented his paper, "Our Highways and How to Improve Them," in a very practical way, and the discussion of the same was quite general. The general opinion of the club is, the present law, if properly executed, is good enough.

After dinner (the dinner and social hour are very enjoyable features of our club meetings) a paper was read by Mrs. J. Klahn on "Economy in making purchases for home supplies." Some of the thoughts of the paper were: Make it a practice to buy only when we have the means with which to pay. This will act as a safeguard against extravagance, and be an aid to economy. By example we teach our children economy.

This paper was replete with good suggestions for farmers, as was also the conversation which followed.

The following resolutions were adopted by the club:

Resolved, That we, the members of the Odessa Farmers' Club, numbering thirty-five, earnestly request the legislature to grant favorable legislation on the principles adopted by the State Association of Farmers' Clubs at their annual meeting held at Lansing, December 7th and 8th 1896.

Resolved, That the Odessa Farmers' Club, composed of thirty-five members, earnestly request the legislature to pass House Bill No. 198, File 55, it being the Kimmis Bill relating to the salaries of county officers.

The meeting adjourned to meet at M. L. Foght's, Saturday, April 10th.

MRS. P. A. WACHS, Reporter.

THE CLYDE AND GRANT CLUB.

The Farmers' Club of Clyde and Grant was entertained, March 3d, by President David Beard, of Ruby, and was largely attended.

The first paper read was C. V. DeLand's letter on Economy in Township Government, from the MICHIGAN FARMER of February 27th, which called out a spirited discussion from many of the prominent men of both towns; also some criticism of the booth system, as to benefits, compared with added cost, over the old system.

A hard times paper, "Stop Growling," by Mrs. F. O. Reynolds, was heartily cheered. Mr. and Mrs. Dexter Hubbell, of Grant, will entertain the club April 7th.

L. B. Rice gave an interesting object lesson on peach tree pruning, budding, etc.; also pronounced Mr. Beard's fine growing orchard uninjured.

During recess a petition was signed to be presented to our legislature, through our representatives, urging the passage of the "Kimmis Bill."

The following action was also taken:

WHEREAS certain evils exist that should be overcome by the most stringent laws; and whereas great good can be accomplished by the enactment of wise laws; therefore, we, members of the Clyde and Grant Farmers' Club, adopt the following resolution, and forward a copy of the same to our representative at Lansing:

Resolved, That we favor the enactment of a law prohibiting the manufacture, sale or use of cigarettes in this State.

Also favor the bill now pending, known as the Sugar Beet Bounty Bill, and favor a law that provides for the coloring of oleomargarine in some color that will surely remove all liability of fraud or deception on the farmer.

MRS. O. McKAY, Cor. Sec'y.

NORTH VERNON CLUB.

The March meeting was held at the home of Mr. and Mrs. Floyd Owen, the 3d inst.

President Phillip Kline being absent, Ex-president J. J. Patchel presided. The general program contained a paper by Fred Cooper, entitled "Contentment is happiness," which was well received.

The club question, "Should the rural districts have free mail delivery?" was led by A. Vincent. It was the sense of the meeting that they should. The great expense was the only hindrance, and it was thought that might be provided for by providing less expensive buildings in the cities.

Resolutions were passed and ordered sent

to our representative in the legislature favoring the passage of the Kimmis County Salaries bill, and the Hammond Anti-Trust bill.

Meeting adjourned to meet at the home of Mr. and Mrs. J. O. Marks, on April 7th.

PETER PATCHEL, Cor. Sec.

SOUTH JACKSON FARMERS' CLUB.

The February meeting was held at the home of Mr. and Mrs. Rhoades. The club is composed of ninety members.

Resolutions were passed in favor of the Kimmis bill; favoring the repeal of the school law of 1895 relative to the purchasing of supplies; favoring the selling of the Jackson Co. fair grounds; and opposing any change in our present road laws making the taxes payable in money.

After a short literary program, the club proceeded to discuss the Association question, "Would it be for the best interest of the State Association to select for every third question one of especial interest to the ladies?" The prevailing opinion was that the State Association should select the questions along the line of needed reforms in legislation, and that the ladies had discussed the Association questions intelligently in the past, and if they wished a question of especial interest to themselves they could place one on the program. A resolution to this effect was passed without a dissenting vote.

JENNIE M. FORD, Asst. Sec.

JACKSON COUNTY CLUB.

At a meeting of Jackson County Farmers Club, held February 15th, the following named persons were elected officers of the club: President, Abram Avery, Sandstone; vice-president, W. H. Smith, Grass Lake; secretary and treasurer, R. D. M. Edwards, Norton.

This club was organized last June. Will hold its next meeting on the fair ground in the city of Jackson, Tuesday, June 1, 1897.

R. D. M. EDWARDS, Sec.

VASSAR FARMERS' CLUB.

At the March meeting the club voted in favor of giving every third Association question to the ladies; also in favor of House Bill, No. 198, and that our representative and senator be duly notified.

W. T. LEWIS, Cor. Sec'y.

When writing to advertiser please mention that you saw their advertisement in the MICHIGAN FARMER.

MUSCULAR AND NERVOUS RHEUMATISM CURED. ONE LEG WITHERING.

DEAR SIR:—I want to write you what wonderful things "5 DROPS" has done for my friend, Mr. D. R. Dunaway, of Copenhagen, N. Y. For six years, on account of muscular and nervous rheumatism, he had not been able to walk without a crutch and cane and suffered so much pain that he had to take morphine to obtain any rest whatever. He was terribly thin and one leg was withering away. I gave him a bottle of "5 DROPS," which he has not yet entirely finished, but to-day he is without pain or ache of any sort. He has thrown away both his crutch and his cane and says he has not felt so well in 20 years. Everybody who has used "5 DROPS" in this neighborhood reports as favorably of it. It is the most wonderful remedy in the world.

Yours very respectfully,

GEORGE KEISER, Copenhagen, N. Y.

If you have not sufficient confidence after reading this letter to send for a large bottle, send for a sample bottle, which contains sufficient medicine to convince you of its merit. This wonderful curative gives almost instant relief and is a permanent cure for Rheumatism, Sciatica, Neuralgia, Dyspepsia, Backache, Asthma, Hay Fever, Catarrh, Sleeplessness, Nervousness, Nervous and Neuralgic Headache, Heart Weakness, Toothache, Earache, "La Grippe," Croup, Malaria, Creeping Numbness, Bronchitis and kindred diseases.

"Five Drops" is the name and dose. Large bottles (300 doses) \$1.00. Six bottles for \$5.00. Sample bottle prepaid by mail 25 cents. Not sold by druggists, only by us and our agents. Agents wanted.

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For all classes of buildings, easily applied, cheaper than shingles, will last a lifetime, and is absolutely fire and lightning proof. Reduces your insurance and is the best roof manufactured. Write for our handsome catalogue and mention this paper.

SYKES IRON & STEEL ROOFING CO.,
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MEN WANTED to Sell Clothing in every County, good wages, steady job, suits to order from \$5.00 to \$10.00, Samples free. American Woollen Mills Co., Chicago.

Miscellaneous.

MRS. BUCKLER'S SWEET APPLES.

Autumn was just beginning to reveal herself in the heart of South Mountain—the gorgeous autumn of western Nova Scotia. It was about eight o'clock in the morning, and the air that streamed lightly over the shoulders of the hills had a most bracing savor. Mrs. Buckler, a freckled but comely and tall young woman, was just setting out for a twelve-mile tramp to the little settlement in the valley, where she had to return a flat-iron and a pair of wool-cards, which she had borrowed from an obliging neighbor.

Neighbors, in those days, were few and far between in the country districts of Nova Scotia. The great emptiness created by the expulsion of the Acadians had not yet been filled up. For the neighbors, it behooved them to be neighborly.

Mrs. Buckler was an untiring worker, and her rare visits to the valley constituted her only holiday. She had to walk, of course, as her husband had no horse, and she had no ambition to ride one of the faithful, but extremely deliberate oxen. And, indeed, a matter of twelve miles seemed nothing of consequence to her.

"Be sure and get back before dark, 'Miry!'" admonished her husband, leaning meditatively against the wood-pile as he watched her kiss the children for good-by. "Shoo! Steve, I reckon you can put the babies to bed all right for once, can't you? It ain't often I get off; and when I do, I like to make a good day of it."

"It ain't a-lookin' after the children that I'm thinking of, 'Miry, as you know right well!" replied Steve Buckler, earnestly. "But you know how thick the bears are on the mountain this year; and there's no manner of doubt that was a wolf brushed by me in the pasture night before last. It ain't safe for you to be coming up through the woods after dark all alone that way. Stay all night, if you find it getting late!"

"Oh! I ain't afraid!" averred Mrs. Buckler, stoutly. "I may get back afore dark; but if I don't, I'll be careful and carry a light with me!"

These confident words she flung back over her shoulders, as she started gaily down the rough woodland way.

Arriving in due time at the settlement in the valley, she did her errands, picked up the news, and richly enjoyed the rare luxury of a gossip. Time went all too quickly; and it was on the edge of dark ere she thought of starting for home. Then, of course, there were vehement protests. Her friends urged her to stay all night, picturing the perils of the journey, and representing that her husband would never dream of expecting her. But Mrs. Buckler, as her friends always said, was very "set." Putting aside all arguments, she started out on her long and lonely tramp.

She had little to carry, but that little was somewhat troublesome to manage. It was an apronful of sweet apples for the children, a treat which she knew they would enjoy. Sweet apples were then a rarity in South Mountain. When at length Mrs. Buckler reached the last house on the edge of the valley, and found herself face to face with the long climb up the mountain, she felt compelled to acknowledge in her heart that the night was very dark.

And she had yet four miles to go, through almost unbroken woods. In those four miles there were but two cabins to break the monotony of the way; and the further of these was a mile and a half from her home. She hesitated a moment, then went into the house and asked for a pine-knot to light her on her journey.

Here again she was urged to stay; but lighting her torch she set her face resolutely to the mountain side. As she penetrated among the ancient trees the unsteady light of the pine-knot cast strangely moving shadows, and monstrous shapes seemed to spring up and disappear on all sides. For the first time she grew nervous, and felt an inclination to glance over her shoulder. This she presently conquered with some scorn. Nevertheless she could not help hastening her steps; and the first cabin in the mountain had the air of a refuge to her, as she turned in to get a fresh pine-knot.

Here, too, she was strongly pressed to end her journey for the night. But now her obstinacy was well aroused. She was nettled at herself for having felt afraid. It was with some hling of the air of one who goes forth to battle that she gripped her torch and clutched her apron of sweet apples, as she turned again to the blackness of the forest path.

Between this cabin and the next the distance was but half a mile. Her nerves were getting now so well steadied that she no longer cared for the looming and shifting shadows, till at length a shadow distinctly smaller than the rest made the underbrush rustle audibly with its motion. Her heart gave a most uncomfortable leap, and she straightway thought of the wolf which her husband had spoken of. But, wolf or shadow, it fled away without menacing her; and she came in safety to the last cabin between her and home.

Here the neighbors were asleep, and she had to arouse them in order to beg another pine-knot. The one which she had got at the previous house was by no means burned out, but she feared lest it should fall before the end of her journey. The sleepy neighbors were astonished at her appear-

ance. They threatened to detain her by force, when she refused their invitation to stay all night with them. But Mrs. Buckler was by this time a good deal "worked up," as she afterwards expressed herself; and treated their kind persuasions with scant courtesy. She almost ran from the house; but in her apron, among the sweet apples, she carried the extra pine-knot, all the same.

To ward off unpleasant thoughts, she kept picturing in her mind the way the children would enjoy the apples in the morning. She also thought of the remonstrances tempered with ill-concealed admiration, with which her husband would greet her return. Her blood quite glowed again as she thought of the lofty fashion in which she would make light of it all. Just at this moment she saw, in the middle of the path before her, a large black bear, watching her curiously.

Her heart stood still, and she herself instantly followed his example. Then she reflected that she must appear calmly indifferent, if she would hope to escape. Slowly she moved forward again, waving her torch; and the bear, stepping out of the path, watched her steadily from among the underbrush as she went by. Then he stepped back into the path and followed her.

Her first and most natural impulse was to run like the wind for home, but this, after one startled leap forward, she checked with a mighty effort of her will. She walked on with swift but steady steps, watching the bear out of the corner of her eye, but all the time clutching obstinately at her apronful of apples. The bear, very slowly, kept drawing closer and closer, bent upon attacking, but evidently deterred by dread of the torch.

But the torch, meanwhile, was burning low; and Mrs. Buckler, in her excitement, failed at first to notice this. She was holding the pine-knot over her shoulder as a sort of shield against her pursuer. When, with a shaking at the knees, she realized that it was on the point of flickering out, she tried hastily to light the other, and in the effort some of her treasured apples fell out of her apron, and rolled behind her on the path.

As soon as the bear came to these apples he stopped, and began devouring them with the keenest relish.

"Why!" thought Mrs. Buckler, with a sudden lightning of her head of terror, "it's not me he's after, but the sweet apples!" and straightway all her old courage returned.

She paused, and took time to light her new pine-knot deliberately and well. Then she hurried on; and it was some minutes before her pursuer was again at her heels.

And now, so sudden are the revulsions of a woman's feelings, she was concerned only for the sweet apples. They were the children's apples; and it went sorely against her grain to let a bear have any of them. Not until he had come most uncomfortably close could she bring herself to again propitiate him; and then she doled out but three of the precious green globes, dropping them on the path behind her with slow reluctance.

The animal took perhaps a quarter of a minute to dispose of this niggardly contribution, and then came on again with a sort of hopeful confidence.

"No!" declared Mrs. Buckler, firmly, "you ain't goin' to have another one!" and she fairly broke into a run. But when that heavy, shambling gallop sounded close at her back, her resolution weakened, and she dropped a couple more out of her apron. While the much gratified bear delayed to eat these, she rounded a turn of the road, and was gladdened by the sight of her own window glimmering some two hundred yards in front.

Calling her husband's name two or three times at the top of her voice, till she saw him fling open the door and rush out to meet her, she hugged the remnant of her apples to her breast, flung her torch at the bear and sped like a deer toward the house. Whether the bear followed her further or not, she never knew. It certainly did not come near enough to the house for her husband to catch sight of it, for as she flung herself into his arms, panting, triumphant, half-way between laughter and tears, he asked her what was the matter.

"Matter!" she cried, indignantly. "That's just like a man, after all I've gone through to get home!" And she pulled him violently into the house and slammed the door.

Steve Buckler was quite too judicious to remind her of the fact that he had urged her either to come home before dark, or else stay all night. He did not even let it appear in his face for an instant that he thought of such a thing. He listened to the story with all the breathless excitement that she had anticipated, praised her bravery and resource, vowed to shoot the bear next day, ate one of the sweet apples, and then, being very sleepy, went to bed. But Mrs. Buckler, before she followed his example, proudly tucked several of the apples under the children's pillows.—Independent.

"Why do you hate soap so?" asked the inquisitive lady. "I don't," said Mr. Dismal Dawson. "I simply ignore it. We don't move in the set; that's all."

SUFFERERS FROM COUGHS, SORE THROAT, etc., should be constantly supplied with "Brown's Bronchial Troches." Avoid imitations.

ATTRACTIVE OFFERS.—W. G. Baker, of Springfield, Mass., who is pretty well known throughout the United States as a wide-awake, up-to-date dealer in teas, spices and similar goods, makes several offers through our advertising columns which are well worth the attention of every person who reads THE MICHIGAN FARMER. A request by postal card will secure from him his catalogue, order sheet and full particulars.

BETTING ON A BEAR.

At Rawson Junction we found a man with a big black bear in a cage on the platform. He explained that Bruin had been taken in a trap three days before, and that he was going to take him down to Silver City to sell him to a saloonkeeper for \$50. While we were surveying the captive, an old man rode up on a cayuse, followed by about the meanest-looking dog ever seen in the glorious West. The canine was squint-eyed, bob-tailed, and poor in flesh, and when rallied about the animal the old man explained that, while his looks were agin him, the dog was really a fighter of the first water. He lounged up and took a look at the bear, and another look at his owner, and finally said:—

"Mister, I reckon ye sorter brag on that b'ar o' yours?"

"There's no call to brag," was the reply. "I didn't know but you was braggin' and bluffin' as to how he could fight. If you was I was goin' to say a few words."

"As to how?"

"As to that 'ere dog o' mine. I hev never put him up ag'in a b'ar as yit, but I think he could hold his own."

"You must be crazy!" exclaimed the owner of the bear. "Why, he'd chaw your dog up at one gulp!"

"Mebbe he would stranger—mebbe he would, but somehow or t'other I can't believe that he would. I've knowed that dog fur three y'ars, and I don't believe your b'ar could chaw him up."

"Well, it stands to reason that he could. From the looks of him I should say that dog o' yours over. He's ready to run now."

"Yes, he looks that way," slowly remarked the old man, "but that's his deceivin' p'int. What's the value of yer b'ar."

"Fifty dollars."

"Wall, I've got fifty dollars in gold which says he can't chaw my dog up in no one minit, nor five, nor ten minits."

"What's that? You want to put your dog agin my bear?"

"I do, stranger, and my money is ready. We'll turn 'em loose on the platform, and if your b'ar chaws up my dog the cash is yours."

The owner of the bear didn't have but \$20, but he put up his Winchester for the balance, and as soon as the stakes were up we got into the station and left the dog and the bear man to arrange things. Some of the slats to the cage were loosened, and after a few minutes all was ready and the two men joined us inside. The dog scratched at the door and whined to get in, and after a look about him the bear left the cage and started for the canine.

"One gulp and your dog is gone!" shouted the bear man; but he wasn't out of the woods yet. The dog was off the platform and up the trail in a flash, while the bear followed at a slower gait. They had been out of sight five minutes when the bear man suddenly exclaimed:—

"Why—why—that bear won't come back!"

"No, I reckon not," replied the old man. "But—but—"

"But the bet was that he'd chaw up my dog and he hasn't done it."

The bear man looked up and down and around, and the situation finally dawned upon him, and he said to the old man:—

"Stranger, did you ever strike a full-blown idiot before?"

"Yes, two or three."

"And did you leave 'em dead broke and far from home?"

"Oh, no. I allus felt sorry for 'em and left 'em sunthin' for railroad fare."

And he handed the bear man \$10 of the \$20, took the rifle on his arm and rode way down the trail without looking back.

THE SOUL OF AN ARTIST.—"Why are you here?" asked the missionary.

"Fer tryin' to pick a woman's pocket," answered the sequestered gentleman.

"Now, my good man, you see what greed has brought you to."

"It wasn't greed at all. I knowed in the first place that there would be nothing worth taking, but I jist wanted to see if I could do it."—Indianapolis Journal.

AN INTERMITTENT HEART.

STOPPED EVERY THIRD BEAT.

But Mrs. Strobe's Heart Now no Longer Lags but Throbs Regularly.

From the Leader, Cleveland, Ohio.

In a large, commodious house at No. 104 Huntington street, Cleveland, Ohio, lives Mrs. Emily A. Strobe, widow of the late X. M. Strobe, and she is the mother of a young man who has been, and is now one of this city's successful and energetic pharmacists. Mrs. Strobe, who has lately recovered from serious cardiac difficulty, when questioned by a reporter regarding her late illness stated as follows:

"Two years ago, I had my first experience with Dr. Williams' Pink Pills. For a long time I was troubled with an ailment which I feared would eventually drive me crazy unless I rid myself of it. It will sound strange, no doubt, to some, but my heart did not beat as it should. Its action was irregular. There would be two pulsations, or perhaps three, and then a sudden cessation. My heart seemed to rest for the period of one or two beats, and then resume its action. Sometimes such lapses would not be so frequent as that, but scarcely a day passed that they did not occur. It felt as though something would strike the heart with great force, and push it out of place. During that period, whenever I lay down to sleep or rest, my hands would become perfectly numb and helpless. I could feel the temporary paralysis coming over them, but I could do nothing which would prevent it. My feet were affected in a like manner, and I had considerable difficulty in walking when such a spell had possession of me. Naturally that state of affairs completely upset my nerves, and any one whose nervous system

is well nigh shattered, can appreciate and understand the misery, chiefly mental, which I endured. I lost much sleep and rest, and often I was compelled from sheer exhaustion to sit down during the day to obtain some repose. But as soon as I did so I felt that numb sensation come over my hands and feet, and I rocked violently in my chair to drive it away, but frequently to no avail.

"One day, my son who was keeping a drug store at the time, brought me home some of Dr. Williams' Pink Pills for Pale People and advised me to take them for my heart trouble. I used the pills about two months and they certainly cured me, for now my heart beats regularly and all numbness has disappeared and my circulation is in splendid order."

We print the above hoping Mrs. Strobe's experience may be beneficial to others who may suffer from derangement of the heart.

Dr. Williams' Pink Pills contain, in a condensed form, all the elements necessary to give new life and richness to the blood and restore shattered nerves. They are an unfailing specific for such diseases as locomotor ataxia, partial paralysis, St. Vitus' dance, sciatica, neuralgia, rheumatism, nervous headache, the after effect of la grippe, palpitation of the heart, pale and sallow complexions, all forms of weakness either in male or female. Pink Pills are sold by all dealers, or will be sent post paid on receipt of price, 50 cents a box, or six boxes for \$2.50, by addressing Dr. Williams' Medicine Company, Schenectady, N. Y.

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The Dairy.

For the Michigan Farmer.

A GOOD RECORD.

In the FARMER of January 16th, '97, I have been reading Mr. J. H. Brown's Dairy Notes in which he gives a record of tests made with his herd of eleven cows.

We are keeping a few cows to make butter. I thought best to weigh the milk, one day, at least, and report to you the result. At that time we were milking six cows, and were well satisfied with the result.

We are not feeding near as heavy as last winter, for the reason that there is not so much demand for butter as last winter.

Test January 23d, 1897.

No. of cow.	Time of calving.	Milk per day, net.
No. 1	June 8, 1896	14½ lbs.
" 2	" 14, "	" 8 "
" 3	July, "	" 9½ "
" 4	Sept. 5, "	" 18½ "
" 5	Dec. 13, "	" 34 "
" 6	Oct. 25, "	" 14½ "

Don't know the exact date of No. 3's calving, as we bought this cow in the month of August.

As we have no Babcock tester, I cannot give you the exact per cent of butter fat in the milk, but it is not very low as we are now making 32 pounds of butter per week.

No. 5 is an extra good cow. We weighed her milk about two weeks ago, previous to January 23d, and had 35 pounds. Am satisfied that this cow gave us 40 pounds of milk for the first two weeks after calving. As we bought this cow when young we don't know what breed she is. I have been culling out for the last three years, and have now some cows that suit very well.

We have one young cow about two-thirds Jersey. We expect her to have her first calf the coming April. This is a splendid young animal. Will try and see what the Jersey blood does. If Mr. Brown can do better from six cows, I should like to hear from him.

[We wish friend Conklin had weighed the milk of each cow for a week, at each milking, and made a composite test for the per cent of butter fat. His cows are making an excellent record, and we think a test for butter fat would show that they are doing even better than he is giving them credit for.]

If the creaming is nearly perfect, and the churning exhaustive, the average per cent of fat might be approximately estimated. But we should be glad to have you keep a record, say for 30 days, and secure a composite test for butter fat.

Take a sample of milk from each milking, for four or five milkings, keeping each cow's milk separate. Keep each cow's milk in a large bottle or Mason fruit can, and take to your nearest creamery. It is not necessary for every dairyman to own a milk tester, but it will pay to secure an occasional test of each cow's milk. And where several cows are kept, for the special purpose of making butter, it is important that the skim milk and buttermilk be frequently tested. We hope to hear from friend Conklin again.—Ed.]

For the Michigan Farmer.

SILCO CONSTRUCTION.

I would like to make inquiry of the readers of your paper that have the stave silo, as to how they like them. Do they freeze enough to hurt the silage, also what width of plank is best to build them off?

[Stave silos are in limited use in some sections of the country. The principal objections to their use have been the difficulty of keeping the walls air tight, and, in cold latitudes, to prevent freezing around the walls.]

As the days go by we find more farmers recommending the stave silo, especially in latitudes where a minimum amount of severely cold weather is experienced. Have any of our readers tried the stave silo? The experience of those who have will be interesting to all readers of the FARMER.—Ed.]

THE COW'S UDDER.

From our Special English Correspondent.

The nervous system, which is intimately connected or associated with the udder, plays an important part in regulating the milk supply. The nerve system that influences the milk department of the cow is said by good authorities to run as follows: A nerve starts from the lumbar portion of the spinal cord—that is, somewhere about the hips—and divides in the pelvis into three branches. Two of these branches enter the udder, while the third is connected with the muscles of the stomach. Those which enter the milk glands are again subdivided and spread over the entire udder, one branch being lost among the vesicles, another in the milk cistern, while a third terminates in the teats. It has been said that the secretion of milk is similar to the secretion of saliva—the more it is stimulated the more the flow. When milk is drawn from the udder the action of certain nerves on the teats affects secretion. This statement is rather vague, but it is a subject that does not admit of definite explanation because a great deal has to be left to surmise the conjecture. Some people believe

in the French theory that the escutcheon, or parting of the hair down the cow's breech, has some bearing upon their milking qualities, but I do not think this theory has been maintained in the practical tests. The size and shape of the udder has a good deal to do with the milking ability of the cow; model udders are usually described as square and blocky, extending well along the belly and carried up well behind. The size and shape of the bag may not be an unfailing guide to a cow's milking powers, but if she has one of the above description the possibility is that she will make good use of it. At any rate a cow with a small round udder cannot possibly give a large quantity of milk. Appearances are sometimes deceitful, but rarely is a cow, for one that has the appearance of a good milker seldom belies it in practice.

YORKSHIRE, Eng.

AGRICOLA.

TAINTED MILK.

[Read at the annual meeting of the Ohio Dairy Association.]

Tainted milk is the great bugbear with which cheese-makers have to contend; it causes more anxiety and mischief than any other one thing known to the trade. If dairymen could be made to understand its effects they would anxiously search for the causes, because it would mean money in their pockets.

For instance, while ten pounds or less of good milk will make a pound of cheese, it requires eleven or twelve pounds of tainted milk, for a tainted or gaseous curd requires more acid, which takes more time to develop, thus driving out the moisture and butter fat. Therefore, the yield is greatly diminished. The loss does not end here, for the cheese is quite likely to be sold at a lower price, for although (with proper treatment) a solid article may be made, the desired flavor is lacking.

But most men who deliver milk at a factory (if it passes the maker's nose without comment or at most a mild warning from him to take better care of the milk) go home without concern, and if the cheese or butter does not bring the highest market price, they blame the manufacturer, and it never occurs to them that their own carelessness has the least thing to do with it.

There are so many sources of tainted milk that it requires great intelligence sometimes to detect them; but the most common is lack of cleanliness and proper aeration. Let me give you the results of an experiment made in the month of October of the mixed milk of the university herd at the experimental farm at Madison, Wis. Taken under ordinary conditions it contained 15,000 germs, 500 per cubic centimeter, while of a cow that had been carefully cleaned and the milking done in a cleanly manner, having the udder and hands clean and moist, only 330 bacteria for the same volume were found. A repetition of the same experiment in February under winter conditions revealed 7,680 germs per cubic centimeter in the milk obtained without special precaution, while the number in the milk that had been taken with care was reduced to 210 germs per cubic centimeter, the bacteria derived from the filthiness causing tainted milk.

When bacteriology is better understood there will not need to be so much said and written about this subject of cleanliness. What I say is a repetition of what has been said and written again and again and will keep on repeating it until the object is obtained.

Go into the operating room of a hospital and ask the surgeon to explain to you why so much care is taken to keep everything in the room so scrupulously clean and every precaution taken that there is no contamination. He will explain to you the danger of germ poisoning and how easily they are transmitted. If a few chance to lodge on the surgeon's knife it means death to the patient by blood poisoning. How careful then ought we to be with that which we eat. There is no article of food which is so easily contaminated as milk, nor any so carelessly handled. Men will go about their milking without a thought of washing their hands, no matter what kind of work they have been doing, brush the cows' udders carelessly, enough to set the

dust and dried filth flying about in the air, which finally settles in the milk-pail and there, in the warm milk, they find just the conditions for multiplying a thousand-fold. Then perhaps the milk is strained through a carelessly washed strainer into a can which may be visibly clean, but in the seams and joints numerous germs are imbedded which a common washing and scalding will fail to dislodge, and oftentimes the can stands near enough to the stable to take on more taint. When the weather is sultry much greater care is needed, for in such weather the germs multiply much faster. Let it be well aired, then cooled immediately to 60 degrees or below, for in a cool temperature the germs lie dormant and will have little effect on the milk.

We have all heard of ice-cream and cheese poisoning; it is my belief that these poisons are caused by tainted milk in the worst form. W. E. Hurd, dairy and food inspector, says: "In all cases of poisonous cheese which have come to my knowledge traces of dangerous milk were found entering into the manufacture of such cheese; and almost, I think always, in cheese of very open texture or porous. Instead of the cheese-maker being to blame for fermenting his curds too much or allowing too much acid to develop, I believe that to be the only remedy whereby the dangerous element can be dislodged. If, as Dr. Vaughn says, the poison is so volatile, then a thorough aeration of the curd separately from the whey would make it possible for the poison to disappear before pressing. Some one has said 'eternal vigilance is the price of liberty.' So I would say to the cheese-makers of America, eternal vigilance on your part will, I believe, wipe out this tyrotoxin scare. Watch your milk more closely and if enough putrid milk creeps in to cause floating curds or other similar indications, throw the curd away; do not take the chance of marketing it and thereby possibly injuring your reputation, the reputation of your factory, and the great cheese industry of the world."

In addition to what Professor Hurd says in the treatment of the curd I would add, while the acid is developing I would mat and pile it until the gas is expelled by the pressure, then by milking and aerating a solid texture is obtained and the cheese will not huff. I have seen milk so badly tainted that the whey would be of a green-

ish color and foam; the curd would be so full of gas that it would float. After working in such a vat the hands would prickle and become swollen. Before I had learned how to handle such milk the cheese would begin to huff as soon as the screw to the press was loosened, and continue to swell sufficiently to raise the followers from the hoop. They would crack open and gas escape. No wonder tyrotoxin could be found in such cheese.

Some of the reasons for tainted milk are as follows: Cows drinking from stagnant and muddy pools of water and dragging the udders through it, when the germs will adhere to the latter, and will be dropped into the milk-pail; dirty, stinking barns, stinking water tanks where milk is cooled; cows in heat, sick cows; poorly ventilated, stinking air where the cows are milked; milk kept too long in foul air before being aerated and cooled; the use of wooden buckets for milking; lack of sufficient care in aerating and cooling; cooling and aerating the milk near contaminated places, such as the hog-pen. I have known of milk being badly tainted by cooling in cistern water which stunk. The patron discovered the cause one morning by using some of the water when making preparation to shave his face.

The presence of gas or taint in cheese is recognized by small round holes called pinholes, and when cheese are made by the granular process there is no way of ridding the curd of this gas, but it will go on developing on the shelves and will never command a good price in market. Such cheese disgusts the consumer and destroys his taste for cheese, whereas if nothing but a good article was to go on the market the demand would be so great that there would be no danger of overproduction. And when we consider that there is about twice as much nutritive value in a pound of cheese as there is in a pound of beef, it ought to stimulate the producers of milk to furnish nothing but the best. Then do not make the mistake of hiring a poor cheese-maker because you can hire him cheap, for he would be dear at any price, but get a good man who understands his business thoroughly. When a pound of cheese can be bought for about the same price as a pound of beef it ought to be found on every table, especially that of the workingman, and it will be when properly made.

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The following discounts will be made on orders sent at one time for one advertiser amounting to \$50 or over, to be completed within one year:

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50 " " 100.....	10 "
100 " " 200.....	15 "
200 " " 300.....	20 "
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No deviation from above rates.

DETROIT, SATURDAY, MARCH 20, 1897.

This paper is entered at the Detroit Postoffice as second class matter.

To prevent mistakes all correspondents who expect pay for their contributions, or to receive credit on their subscription account, must state so distinctly in forwarding articles for acceptance. This rule must be invariably observed if compensation is expected, as claims made afterwards will not be considered.

TO CORRESPONDENTS.

For the purpose of preventing mistakes, and to facilitate the answering of questions promptly, we make the following suggestions to our correspondents. Correspondence relating to farm practice and the dairy should be sent to J. H. Brown, Climax; all correspondence relating to farmers' clubs should go to A. C. Bird, Highland; matter relating to the Grange should be sent to Kenyon L. Butterfield, Lansing. Each of the parties referred to have the conduct of the departments named. All other correspondence, on such subjects as horticulture, live stock, poultry, markets and public affairs should be sent directly to this office. By this means the delays caused by re-mailing matter intended for the several departments will be avoided, and the chances for errors materially decreased.

SHOULD THE SALARY BE RAISED?

Governor Pingree has issued a proclamation, asking the taxpayers of the State to vote for an amendment to the State constitution increasing the salary of the Attorney General from \$800 per annum to \$3,500. The State legislature, by a practically unanimous vote, has also endorsed the proposed change.

There is no doubt but that the present salary is entirely too small. It is niggardly if the man occupying the position has sufficient ability to perform its duties. But it strikes us the proposed salary goes too far in the other direction. If it had been placed at \$2,000 we think it would have been endorsed by a majority of the taxpayers. In the present condition of business in this State, the very low cost of everything, the decline in the rate of wages in all industries, even when employment can be obtained, as well as the extremely low prices producers are obliged to accept for their products, we regard the proposed salary as altogether too high. We have seen salaries and positions so multiplied and increased in this county, each legitimate advance being followed by dozens of others which were neither just nor necessary, that we think a very conservative policy is required to protect the interests of taxpayers—those who have to

foot the bill. Generosity is out of the question under present conditions; justice is all that can or should be considered. The proposed salary is too generous.

THE WOOL TARIFF.

The schedule of duties in the proposed new wool tariff, while apparently very favorable to the wool-grower, in one important particular falls far short of what the situation and the expectations of the wool-grower demand. This is in reference to the importation of so-called "skirted" fleeces. It was a source of weakness and disappointment in the McKinley tariff law, and it will be so in the new law if the schedule is adopted in its present form.

Nominally, on high-class fine wools, American growers are protected to the extent of 11 cents per pound. But all skirted fleeces are allowed to come in under this clause, and this practically reduces the duties to eight cents, or less, per pound. Let us explain how this is. A skirted fleece is one which contains only the best and lightest portions of the fleece, such part of the fleece as is grown on the belly, legs, neck and breech being taken out. Then these skirted fleeces are packed in bales, each one spread out and packed back to back, so that there is neither twine, nor anything else but the best portions of each fleece in the bale. Practically that wool is sorted, and to that extent should pay extra duty. This is the loop-hole which importers and manufacturers provided for themselves in the McKinley and previous tariff bills, and they propose to have it again.

The great advantage to them is that the compensatory duties on woolen goods will be calculated at 11 cents per lb., while practically they pay only 8 cents. Just as sure as they accomplish what they aim to do, the next tariff bill will be short-lived, and the manufacturer will again have to meet conditions which have cost him many thousands of dollars in the past four years. It will be his own greediness—his desire for unjust advantages—which will be to blame. The wool-grower has felt that the McKinley tariff, while promising much, did not fulfill its promises. It was this very skirted clause which stood in the way, and gave the manufacturer and importer an undue and unjust advantage.

If the prospective law is adopted without any discrimination against such fleeces as we have described, then the wool-grower will have eight cents protection instead of twelve as the law promises, and he will at once declare the law a failure.

Then it will be a heavy discrimination against the wools of South America, where the whole fleece is exported, and in favor of Australian wools—a discrimination against an important product of a people with whom we are about to attempt to establish reciprocal trade relations, and in favor of one with whom we cannot expect to extend our trade relations, as their sympathies are entirely with Great Britain, and their trade naturally follows them.

Another effect it will have will be to compel the wool-growers of other lands to adopt the same method of sorting their wools before shipping to our markets, and practically lead to the discontinuance of the importation of wools put up in a different way.

The schedule of wool duties, as it now stands, is substantially as follows:

The schedule is divided into three classes: Class 1 includes all wools of Merino blood, immediate or remote, and others imported from Buenos Ayres, New Zealand, Australia, Cape of Good Hope, Great Britain, Canada, Egypt, Morocco and elsewhere.

Class 2, Leicester, Cotswold, Lincolnshire, Down combing wools, Canada long wools, or other like combing wools of English blood, and hair of the camel, Angora goat, alpaca and other like animals.

Class 3, Donskol, native South American, Cordova, Valparaiso, native Smyrna, Russian camels' hair and wools heretofore imported from Turkey, Greece, Syria and elsewhere.

The duty on wools of the first class, which shall be imported washed, shall be twice the amount of the duty to which they would be subject if imported unwashed; and the duty on wools of the first and second classes which shall be imported washed, shall be three times the duty to which they would be subjected if imported unwashed.

The duty upon wool which shall be reduced in value by the admixture of dirt or other foreign substance, shall be twice the duty to which it would be otherwise subjected.

The duty upon all wools or hairs of the first class shall be 11 cents per pound, and upon all wools or hairs of the second class 12 cents per pound.

On wools and on camels' hair of the third class of the value of 13 cents or less per pound, including charges, and on common

goat hair, the duty shall be 32 per cent ad valorem.

On wools and on camels' hair of the third class, the value exceeding 13 cents per pound, including charges, 50 per cent ad valorem.

Wools on the skin shall pay the same rate as other wools.

On shoddy and all other wastes, 30 cents per pound.

The other provisions of the bill seem to be fair and equitable. But with skirted wools coming in as unwashed wools the administration has to stand the reproach that it increased the duty too much, while the wool-growers will charge it with selling them out to the manufacturers, because they will only be benefited to two-thirds the extent promised them in the law. It will injure the administration with the consumer, and at the same time disgust the wool-grower. Better change to a plain 10-cent duty on the first two classes, and then place an extra duty on skirted fleeces. It would only be fair and equitable, and not subject the majority in Congress to the charge of attempted deception and subterfuge.

NOT SOUND ARGUMENTS.

The Lansing *State Republican*, in a lengthy editorial upon the proposed amendment to the State constitution increasing the salary of the Attorney General, says:

"The single proposition that is submitted to them is this: To compel the lawyer who becomes attorney general to take up his residence, during his term of office, at the seat of government and give all of his time and strength to the duties of his office, and as compensation for such services the state agrees to pay him the sum of \$3,500, which is just one-half of that which each member of the supreme court receives, \$2,500 less than is paid each of the six judges of Wayne county, and \$1,500 less than the prosecuting attorney of Wayne county and the corporation counsel of Detroit receive, respectively, for their services yearly."

The fact that the proposed salary of the Attorney General is less than that paid circuit judges in Wayne county, is not convincing as to the merits of the proposition. The six circuit judges of this county each receive \$6,000 per year, or a total of \$36,000, while other judges are brought in from other counties to assist them. It is only a few years ago that one circuit judge, at a salary of \$1,500, with no outside assistance, was considered sufficient. Then the Corporation Counsel and the Prosecuting Attorney have had their salaries increased until each is receiving \$5,000, while the number and compensation of their assistants have also steadily increased. We regard the amount of money paid out to courts and lawyers holding public positions in this county as an outrage upon the taxpayers and a public scandal. We hope the time may never come when the State follows the lead of Wayne county in this direction.

In the Farmers' Clubs department this week, Mr. A. C. Bird replies to the letter of Mr. Helme which appeared in last issue. Those interested should read these two articles carefully, as they come from men who have been studying the effects of the mortgage tax law.

In the London wool sales now in progress, Americans are buying heavily of Australian wools—the best Merinos and cross-breeds being selected. Prices for these grades hold firm, but it is doubtful if they would were it not for American purchases. Other grades are weak.

The merits of what is known as the wind-stacker has not been recognized by the farmers of Michigan except in a very limited way. Why this is so we are unable to say, especially when those of Indiana and Illinois have been quick to adopt because of the great saving in labor it effected. Ninety per cent of the threshing machines sold in Indiana and Western Ohio, and in the wheat producing sections of Illinois, are equipped with wind-stackers. In this State manufacturers of threshing machines at Battle Creek and Port Huron, when sending their machines to other States, equip them with wind-stackers, but the farmers of Michigan, for some unaccountable reason, persist, or have persisted thus far, in ignoring the merits of this device, and refusing to profit by its advantages. We think the low price of wheat has had something to do with this, for, as a rule, our farmers are quick to avail themselves of the latest improvements in farm machinery. With present values holding in wheat, we look for a change in this respect, for the stacker certainly does its work much cheaper than it could be done by hand labor and the work is anything but easy or pleasant.

"Ask your Druggist for the Kindergarten Novelty, 'The House that Jack Built.'"

A FALSE AND MISLEADING STATEMENT.

The Washington correspondent of the *Detroit Free Press* must be densely ignorant regarding matters pertaining to wool and woolen goods, or he intentionally falsifies facts when writing about them. In a special dispatch from Washington to that journal, dated March 11th, referring to the proposed tariff schedule on wools, he says:

"The woolen schedule which will be agreed to during the present week will show much higher rates on raw wool than did the McKinley law, and the committee has been compelled to yield to the arguments of the woolen manufacturers who demand that if raw wool is to be dutiable, a compensatory duty shall be levied upon all woolen goods sufficient to offset the tariff on the raw material. As it is estimated that it requires from four to four and a half pounds of raw wool to make a pound of woolen goods, the enormous increase in the price of manufactured woolens can be seen at a glance."

The bulk of the clothing wools imported into this country, both under a tariff duty and when entirely free, were Australian. These wools rarely shrink more than 50 per cent in scouring. At that rate of shrinkage it requires two pounds of wool to produce one pound of woolen goods—not from four to four and a half pounds. At 60 per cent shrinkage it would only require two and a half pounds of wool to make a pound of goods.

As to increased cost, let us examine into that a little. The schedule of duties proposed on foreign wools has not yet been settled. But, taking ten cents per pound as a basis for calculation, we find that it would add 20 cents to the pound of woolen goods on wools shrinking 50 per cent, and 25 per cent on wools shrinking 60 per cent. The average run of woolen goods used for clothing weighs from 12 to 14 ounces to the pound. At 10 cents per pound duty, the rate would be five-eighths cent per ounce, and that would mean 7½ cents per yard on goods weighing 12 ounces, and 8½ cents if weighing 14 ounces. As such goods, made of pure wool of the highest grade, as this calculation supposes, costs from \$1.25 to \$2.50 per yard, according to style and finish, and it requires seven yards to make a suit of clothes, we find that the increased cost of a suit of clothes from such goods would be from 52½ to 61¼ cents. Such suits sell at retail, ready made, at from \$15 to \$18. Those selling under these prices contain more or less shoddy or other substitutes for wool. When made to order by a custom tailor in this city, they range in price from \$25 to \$35. These figures will serve to show the very slight difference in cost which a tariff on wool makes in goods by the time they reach the consumer. The greatest cost is labor involved in transforming the wool into clothing—beginning with the shearer and ending with the tailor. The prices given above were furnished by dealers and tailors in this city.

It must be remembered that woolen goods are now under a protective tariff, and the only addition to the cost will be an amount sufficient to offset the increased cost of the wools.

The correspondent adds, by way of clinching his statement:

"The rates now being considered by the committee will add at least 50 per cent to the cost of every piece of woolen goods, either imported or domestic, that may be placed on the market after the new law goes into effect."

The idea that the duties proposed will increase the cost of goods 50 per cent is simply rank nonsense, and is the result of reasoning from wrong premises—i. e., that it requires from 4 to 4½ pounds of wool to make a pound of goods, and that the duty on manufactured goods will be largely increased over present rates in addition to providing for the increased cost of wool.

The State Senate last week refused to confirm the appointment of ex-Gov. Luce and Rev. Morgan Wood, of Detroit, whom Gov. Pingree had named for member of the board of control of the Iowa house of correction and member of the state board of corrections and charities, respectively.

AMERICAN BEET SUGAR.

The Jarecki Chemical Co., of Sandusky, O., have issued a pamphlet on this subject, in which they give full information regarding the development of this industry and the growing of the sugar beet. Also offer to furnish free of charge the best imported beet seed for experimental plots and chemical analysis of the beets grown, for the purpose of determining what localities are adapted to the industry, with a view to locating factories. A postal card to the above named company will bring the pamphlet.

TOWNSHIP TAXES AND EXPENSES.

To the Editor of the Michigan Farmer.

Having been a subscriber to your valuable paper for many years, I must say that it is always one of the first to be looked over. Among all of the good things it is not strange that there should be something now and then that is not just suited to our taste. The following is a sample: I see that in your last issue C. V. DeLand, State tax statistician, is trying to enlighten the people in regard to the extravagance in township expenses, and the Editor of the FARMER thinks that no other man in the State has made such a thorough study of the subject, and infers that the people are profiting greatly by his work.

Mr. DeLand says that all taxes levied in townships are directly under the control of the taxpayers. Very true, and I think that they are very carefully watched. He also states that it costs more to run the 1,500 townships in the State than to run the State government. I must say that it looks very reasonable that it should. Friend DeLand also says that the average expense per township in the State is more than \$1,500, and seems to think there is some margin for retrenchment. He also states that about 50 per cent of this is for contingent purposes, and that outside of the salaries of supervisor, town clerk and commissioner of highways, there are but few contingent expenses. He thinks \$750 is a large amount to pay for such services. Now, if the gentleman is honest in making the statement that it costs \$750 for the above services, then he is ignorant in regard to the matter. I don't believe that there is a township in the State that pays one-half of the amount for such services. He also says that many township boards hold from ten to twelve sessions a year. It may be so, but in Eckford township we never hold more than two sessions, elections excepted. The statement that it costs more to run the townships (school tax excepted) than the State is misleading and false. The State tax apportioned to Eckford township for 1896 was \$2,068.22, and the total township tax, except school, was only \$503.22. The total paid to township officers for the same year—supervisor, clerk, highway commissioner, members of township board, board of review, school inspectors, and health officer—was only \$249.15. Now, I believe in fair play. Tax Statistician DeLand is not a farmer, and of course if he can make it appear that we as farmers are extravagant at home, then we will have less reason to complain about the expense incurred by the tax statistician as well as other branches of the state department.

I can see no reason why it should cost very much more to run other townships than it does to run Eckford. We have a population of over 1,000, and the assessed valuation for 1890 was \$842,280, and stands third in valuation in Calhoun County.

CALHOUN CO.

T. J. SHIPP.

The Secret of Success in Dairying. A High Standard.

The truth of this is well illustrated by the results obtained at the recent convention of the Connecticut Dairymen's Association at Hartford, Conn., January 19, 20 and 21, 1897, where a grouping of the exhibits scoring above 85 points shows the following facts:

The Best Butter in the whole exhibit, scoring 98½ points, was made from cream separated by Cooley Creamers and Improved U. S. Separators, made by the Vermont Farm Machine Company. This was the leading score in the Proprietary Creamery Class.

The 2d Premium in this class, 97½ points, was also made from cream separated by Cooley Creamers; and the same is true of four out of six exhibits in this class, all scoring 96 points and above.

Thirteen out of fourteen Co-operative Creameries use among their patrons the Cooley Creamers, manufactured by the Vermont Farm Machine Company.

The 1st and 2d Premiums in this class went to butter made by the same apparatus, the scores being 97 and 96½ points respectively.

In the exhibits of butter by private dairymen at the Connecticut convention the same preponderance is noticeable of the use of dairy machinery manufactured by the Vermont Farm Machine Company, either their Cooley Creamers or their Improved U. S. Cream Separators, the complete list showing that the number using this machinery amounted to 60 per cent of all the exhibitors scoring 85 points or above, and of this large number using this one company's apparatus, so many scored above 95 points as to aggregate one-third of all the exhibitors. This shows the quality of the butter produced by these goods.

This grand record is the strongest sort of a testimonial to the superiority of the apparatus manufactured by this firm, and is made more impressive by a perusal of the pamphlets furnished free by the Vermont Farm Machine Company, Bellows Falls, Vt., in which there are hundreds of testimonials from dairymen and creamerymen in all parts of the country, testifying to just such work of the machinery furnished them by this concern, the testimonials covering every important implement for creamery or dairy use.

List of patents on agricultural inventions issued during the week ending March 9, as reported for the FARMER by O. E. Duffy, 707 G. Street, N. W., Washington, D. C.: S. A. Ayers, Lansing, Mich., automatic corn dropper; A. J. Colburn, Greenville, Mich., potato planter; E. P. Fox, Paterson, N. J., transplanter; C. D. Hardshey, Halls Corners, N. Y., potato digger; B. F. Hopkins, Huntsville, Tex., cotton chopper; E. A. Johnston, Chicago, Ill., mower; R. C. Livesay, Milwaukee, Wis., grain shield for harvesters; B. F. Ricker, Gallon, Ohio, corn harvester; G. W. Rife, Boston, Ind., cultivator; W. G. Scott, Rock Dell, Minn., cultivator; L. H. Smith, El Cajon, Cal., cultivator; W. Sobey, Racine, Wis., wheel cultivator; W. Straft, Elmira, N. Y., harrow.

EDITOR MICHIGAN FARMER:—I wish to let your 35,000 subscribers know where they can get the best and cheapest wire and slat fence machine. Address, OREN STONE, FLINT, MICH.

NEWS SUMMARY.

Michigan

The beet sugar bill has passed both houses of the legislature and waits the governor's signature.

It is reported that Bangor farmers have contracted to raise 100,000 bushels of cucumbers for the new pickle factory in that village.

The fruit-growers of Manistee county will hold a meeting at Bear Lake, March 25, for the purpose of forming a county horticultural society.

A carload of draft horses was recently received at Dorr from Kansas. The animals are said to be fairly good ones, and are now being offered for sale.

Citizens of White Pigeon have announced their intention of sending 150 sacks of potatoes to the Salvation Army in Detroit for distribution among the poor.

The 60th anniversary of Michigan's admission into the Union occurred last Tuesday, and public exercises were held at Lansing in honor of the event. It was also the 50th anniversary of the removal of the capital from Detroit to Lansing.

A farmer named Bennett, living near Ensign, was arrested Wednesday on the charge of being a counterfeiter. He had just received some material from Chicago which excited suspicion, and an investigation showed that he possessed dies for making silver dollars.

The various Granges of Lenawee county met at Adrian last Tuesday, and decided to organize a mutual insurance company. It will be known as the Patrons' Mutual Fire Insurance Company of Lenawee county, and a charter will not be asked for until \$250,000 in risks have been pledged.

A member of the legislature has introduced an amendment to the State constitution which would give all college students of the required age the right to vote at all elections. It is claimed this would increase the vote of Ann Arbor by 1,500 and virtually place the municipal offices in the hands of the students.

The various rivers of the State have been very much swollen by the melting snow and heavy rains of last week, and in a number of places considerable damage has been done by high water. In some sections wheat fields are said to be flooded, and the alternate freezing and thawing this week will doubtless result in more or less injury to the crop.

General.

President McKinley has decided to send Col. John Hay, of Washington, D. C., as ambassador to England, while Gen. Horace Porter, of New York, has been given the French ambassadorship.

Postmaster General Gary announces that postmasters will be allowed to serve out their terms, except in cases where the patrons demand a change because of incompetency or unsatisfactory administration of office.

The first cargo of steel rails from this country for Japan is now being loaded on the British steamer Fortuna at Philadelphia, together with a large consignment of locomotives built in that city and intended for Japan.

Washington Hesing, postmaster of Chicago, resigned his office last Wednesday in order that he may enter the coming municipal campaign unhampered. He has decided to run for mayor on the Business Men's ticket.

The Illinois legislature appears to be taking up the fight which has recently been begun against the large department stores, such as are conducted in the larger cities. A bill designed to abolish such stores has been introduced in the legislature. It provides, in substance, that no corporation shall carry on the business of retailing merchandise.

The big block occupied by the Ely Walker Dry Goods Co., St. Louis, Mo., was entirely destroyed by fire last Saturday night. The company's stock was valued at \$1,200,000 and the building at \$300,000. The insurance aggregates \$1,000,000. A defective electric wire caused the fire. Other large fires during the past week have occurred as follows: Chicago, Ill., John A. Tolman & Co's wholesale grocery; loss, \$185,000; Sheffield, Ala., 1,500 bales of cotton; loss, \$50,000; Elkins, W. Va., general stores; loss, \$100,000.

In accordance with the call of the President, Congress assembled in session last Monday. President McKinley, in a brief message, described the condition of the government's finances and the necessity for the passage of a tariff law which shall provide ample revenue. The tariff bill which the ways and means committee has been working on for some months past, was immediately introduced in the House, and the discussion of the measure will begin in a few days. Thomas B. Reed was re-elected speaker of the House.

Heavy snow and rain storms in the West have caused the waters of the Mississippi and other rivers to reach a very high mark during the early part of this week. A number of breaks in the levees occurred in Arkansas and other southern states and the damage resulting has been heavy. The storms developed into blizzards in some of the northwestern states, the accompanying cold causing heavy losses of cattle and sheep on the ranges. The loss of human life has also been considerable and thousands have been driven from their homes.

Foreign.

Ranavalona III., the queen of Madagascar, who has only held her position nominally since the island was made a French colony, on June 20, 1896, has been exiled to the island of Reunion, a French possession near the island of Mauritius. The queen came to the throne in 1883.

The situation in Europe continues to cause alarm, as it is now evident that Greece does not propose to abandon Crete. The commanders of all the fleets except the French and Italian have been ordered to immediately blockade the principal Greek ports, and an ultimatum will be addressed to Greece. It now looks as if war between Greece and Turkey is inevitable and it is impossible to foresee what action will be taken by the other powers. There is a possibility of a number of the great powers becoming involved in the conflict.

A Scrap of Evolution.

Less than 40 years ago the light used in the rural districts was from a feeble candle or an alternately flaring and smouldering lamp fed by some animal oil. At the time of the discovery of crude petroleum, in August 1859, Mr. R. E. Dietz, of New York city, had been engaged in the manufacture of lamps, etc., for 19 years, having begun business in 1840, and was already well and widely known for the excellence of the limited line of such goods as sufficed to meet the restricted demand of that time. With the successful refining of petroleum the world was speedily brightened by a new light, and many thousands of its inhabitants saw it at the hands of Mr. Dietz. In the past 55 years, by reason of their manifest superiority, the Dietz goods have found entrance into the markets of almost every land beneath the sun, and R. E. Dietz and his successors, R. E. Dietz Co., have been untiring in their efforts to meet if not to actually anticipate every want within the power of a lantern or lamp to supply. As noted in the advertisement which appears elsewhere, the R. E. Dietz Co., of New York city, send free, upon application, a very complete illustrated catalog of their goods. From this catalog a clear idea of the extent and variety of their output may be obtained and the extensive line of goods designed especially for use on the farm and in the village cannot escape notice.

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NEW UNIVERSAL HAND GARDEN TOOLS
Success of 1896. Better for 1897.

Combination Seeder, 4 TOOLS IN 1, and Cultivator. Double Wheel Hoe. BEST GOODS.

RECOMMENDED BY MARKET GARDENERS.
A dozen styles to select from. Write for circulars and address of nearest supply depot to
AMES PLOW CO., SOLE MAKERS,
New York and Boston.

SEEDS. Send for Price List of Northern Grown Tested Garden, Field and Grass SEEDS. Choice Seed Oats, Spring Wheat, Rye, etc. Samples and prices on application.
CRONENWETT & SONS,
544, 546, 548, 550 & 552 Michigan Ave., DETROIT, MICH.

BARLEY—THE SUCCESS.
Six-rowed, beardless and hull remains tight. Yields good. Earlier to ripen than any beardless variety. Try it and you will sow no other. 75c per bu. Bags 13c. E. D. FULLER, Otter Creek, Jackson Co., Mich.

Thoroughly Fire-Dried Pedigreed Seed Corn.
Brown's Medium Early Yellow Dent. Price per bushel, reasorted, shelled and leaved (new bags), \$1. Address J. H. BROWN, Climax, Mich.

CONRATH BERRY PLANTS FOR SALE.
We will furnish strong plants, guaranteed true to name, for \$5 per thousand delivered in car at Ann Arbor. Cash must accompany order. Reference, Ann Arbor Savings Bank. Address
BRAND BROS., P. O. Box 1198, Ann Arbor, Mich.

BARLEY, "OHIO BEARDLESS."
Six-rowed, beardless and hull remains tight. Early to ripen. Yields more bushels per acre than oats and brings the farmer twice the money. Try it. \$1.00 per bushel. Bags 15c each. Write for circular, catalogue and prices on Clover, Timothy, Red Top, Blue Grass, Orchard Grass and Field Seeds.
THE HENRY PHILLIPS SEED & IMPLEMENT CO.,
115 & 117, St. Clair St., Toledo, Ohio.

CANCER and Tumors scientifically treated and cured. No knife. Book free. 25 years experience. Dr. L. H. Grady, 118 W. 7th St., CINCINNATI, OHIO.

FARMERS!

Don't waste time stacking straw, the
WIND STACKER
Does it Better without manual labor.
See that your thresherman is properly equipped, and give him timely notice.

HAVE YOU STUMPS TO GET RID OF?

HERCULES POWDER
WILL DO IT SAFELY, SURELY AND CHEAPLY.

ASK YOUR DEALER FOR IT, AND IF HE WANTS TO PUT YOU OFF WITH SOME UNKNOWN BRAND, SEND TO THE HERCULES POWDER COMPANY, Chicago, Ill., and Pittsburgh, Pa.

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which represent the best of their kind. The engines are simple and compound, traction and portable. They range in horse power from 8 to 20, and are constructed of the best material throughout, having in view large traction power, easy steaming qualities, simplicity and durability. THE RUMELY SEPARATORS combine the apron and vibrator principle in one machine, which produces a separation of grain not attained by other machines. They are fast, clean, economic threshers 1897 catalogue mailed free. Write today
M. RUMELY CO., LA PORTE, INDIANA.

When writing to advertisers please mention that you saw their advertisement in the MICHIGAN FARMER.

New Plant that Cures Asthma—Free.

The new African Kola plant is Nature's botanic cure for Asthma in every form. Mr. A. C. Lewis, editor of the *Farmer's Magazine*, writes that it cured him when he could not lie down at night for fear of choking. Rev. J. L. Coombs, of Martinsburg, W. Va., testifies to his entire cure after thirty years' suffering, and many others give similar testimony. Its cures are really wonderful. If you are a sufferer, we advise you to send to the Kola Importing Co., 1164 Broadway, New York, who will send you a large case by mail free, to prove its power. It costs you nothing, and you should surely try it.

There is no better wheel than

Sunol Bicycle

There are no better wheels for the money than
Hercules & Stella
for men, for women,
Send 15 cents for pack Sunol Bicycle Playing Cards. The McIntosh-Huntington Co., 4 LONG STREET, CLEVELAND, O.

CARRIAGE WHEELS \$5.50

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We Sell Direct to the Farmer
SARVIN PATENT WHEELS.
Tired with R. E. Steel Tire, all primed and bored for boxing. Wheels ready for painting and immediate use. For particulars write
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The Household.

CONDUCTED BY MRS. ELLA E. ROCKWOOD,
FLINT, MICH.

We should be pleased to have any of our readers who take an interest in household topics, send in their views and opinions upon any subject which is under discussion, or which they wish discussed. This invitation is general, and we hope to see it accepted by many. Address all letters for THE HOUSEHOLD to Mrs. Ella E. Rockwood, Flint, Mich.

STORM AND SUNSHINE.

The waves dashed up against the shore,
The wind beat out again;
The sea fled wildly on before,
And sobbed and moaned with pain.

The heavy clouds hung low and dark,
The rain swept on below,
And blotted out a storm-tossed bark—
Sad type of human woe.

But that was yesterday, my dear,
To-day the sun shines bright,
And all that seemed so wild and drear
Has vanished in the night.

The little waves run up the shore,
The sea forgets its pain;
The whole wide world grows glad once more,
And courage lives again.

Take cheer, sad heart, 'tis dark to-day,
But let us not repine;
These gloomy clouds will fly away,
To-morrow's sun will shine.

—Good Housekeeping.

HOME CHATS WITH FARMERS' WIVES.

MEN AND WOMEN.

In another column Hope Daring calls attention to the fact that there are those among us who are not exactly fair in regard to the men; that they are being maligned and made to appear unkind of the happiness of their wives.

As your editor is included in the list of offenders in this direction, a few words in vindication will be attempted.

Now, nothing was farther from my intention than to lay myself liable to this accusation, yet I am prepared to prove my assertion that men as a rule are not so religious as women, and very few claim that they are so. Women take to religion as naturally as a duck to water. Proof of this is to be found in every town and hamlet and needs no comment. One glance at the average prayer meeting or Sunday school will demonstrate this fact. It is the women of our land who make up the religious gatherings to a great extent, and while boys may be as regular in attendance as their sisters, yet the tendency is for them to drop out as they become older.

It is presumable that any woman would like to have her husband attend church with her. Most women have a feeling of pride in this respect. Yet there are scores of good men who habitually remain away from church while knowing perfectly well that it would please their wives to have their company at that time. It is no sign that a man is not good and kind in his family because he does not attend church. Some of the very kindest husbands and fathers never do so.

Of course there are just as many good men as there are women. Women are not angels by any means. I guess most of our husbands would say we were a trial sometimes at the least. I do not hesitate to say that for downright meanness I would select a woman every time.

No mention was made in this connection of unhappy homes. A woman's happiness is not involved so easily as that. Little annoyances do not cause unhappiness. I believe the proportion of unhappy homes is really small. Personally I know of not one, yet this is not saying that in all homes everything goes off smoothly at all times.

It is perfectly natural for man to be masterful and for woman to be yielding, especially where her affections are concerned. She enjoys ministering to her loved ones, and many a good husband is spoiled by a fond, foolish young wife who delights in waiting upon him, and catering to his every taste. If there is blame to be attached to anyone it should fall as frequently upon the wife as upon her mother-in-law, for the influence is not greater in one instance than in the other. A man can be made over quite readily, beginning at the time he falls in love. It would not be human nature to be the object of so much solicitous attention as is bestowed upon some men by their fond but foolish wives and not be a trifle spoiled thereby. I've noticed, in the rare instances where it is the husband who "stands round", that as a rule the wife gets domineering and tyrannical. I don't think authority over men is good for women. Like voting, it would be apt to turn their heads.

But, joking aside, I do not for a moment

suppose there is a woman among us who would not indignantly resent the insinuation that her husband is not the best, the truest, the kindest in all the world. As well intimate to her that her baby is not handsome. Surely men will make great sacrifices, if necessary, for their wives, yet in the little things of every-day life I still believe them, as a rule, less thoughtful. Not my husband, you understand, nor yours, but the other woman's.

"Man's love is of man's life a thing apart,
'Tis woman's whole existence," says Byron, and he evidently knew what he was talking about. Woman's heart is quite apt to run away with her head. Any woman who truly loves a man, delights in those little attentions to his comfort, his pleasure, which are common in the home. She studies his tastes in cookery, in dress. She wears her hair the way he likes it and calls the baby by the name which he favors. But she loves to do it. Bless you, if deprived of the privilege she would be far more unhappy than she is at remaining away from church to please him. I do not think men are to blame if some of them have become a trifle autocratic. It is the women who have made them so.

THE OTHER SIDE.

I do not want to prove a disturbing element in this harmonious Household, yet I cannot help feeling a little sympathy for the "male men," as our good Samantha says. I am somewhat puzzled. Tell me, good wives, are our kind editor and "Mrs. Grace" right? Are men, your husbands and the fathers of your children, irreligious and unkind of your happiness? No, I do not mean to be unkind. I want information. Of course, there are men who are bores, but are there not as many good kind husbands and fathers as wives and mothers?

If not, why? Who is to blame? Is it the wives or the husbands? Oh, it means so much to a woman—the dream of a happy home life where all the worries are shared with another and all the joys intensified because each one brings delight to a loved one! Who is to blame if the reality proves so different from the dream? Shall we say it is the mothers-in-law? Surely a boy can as easily be taught a reverence for God's house as a girl. Beware of letting the boy think he is not expected to be as considerate of others' happiness as his sister is. Don't laugh at the boyish assumption of authority over her. Neither commit the grave error of scolding him. But show him just how it looks to you and teach him that love unexpressed loses half its value. Remember, dear tired mothers, you will be the mothers-in-law of the next generation, therefore you can say what the husbands of that day shall be. You see, I am assuming that the mother alone must train the boys. Now that does not seem to me the right way, but if your husband belongs to the class often depicted in the Household and domestic journals of to-day, as you care for your boy's eternal welfare, bring him up to be a different man.

To go back to my starting place, is this picture these periodicals give of the husband a true one? Are men, as a rule, less kind in their home relations than women? Are men usually to blame that so many live as husbands and wives who are not among those "whom God hath joined together."

Please tell me what you think, sisters.
HOPE DARING.

THE MEANS OF GRACE.

When last Saturday's paper came and I read the assuring words of the kind-hearted editor and the letter of Mrs. Grace, my last fear of the waste basket took wings and "I sez to Joslar, sez I," "I'm goin' to write to that 'ere MICHIGAN FARMER!" Hence I prepare to write and choose my subject, "The Means of Grace."

About all the troubles of life are brought about by mistakes. We mistake our calling, our strength, our friends, and, worst of all, God. Then the inevitable overtakes us, and that is, confusion.

It is much as it used to be in school when we were trying to work out those problems in ratio and proportion, the numbers used to have such a provoking way of getting over into the wrong column, the extremes

where the means ought to be, and *vice-versa*, and it was never until we had them placed in their proper places that the answer came right.

And is it not true in life? We often make the same error, and find that not until we place our ambitions, our friendships, and our talents in correct relation to ourselves, does the solution to life's problem begin to appear.

This may be true in our religion. We get the "means" where the "extremes" should be. Among the means of grace are generally named, preaching services, prayer meeting, Bible study and the fellowship of Christians. These are the means of grace truly, and happy ought we to be if we call them ours. But they are only means, and no one ought to be looked to as an end in itself. God's design for each of us is a character patterned after the Divine model. And that, for us farmers' wives, means often self-denial, patience and cheerfulness, not experienced in spasms, but a part of the daily life. God will answer the cry for help that is offered from a hot, steamy kitchen as quickly as though it came from a prayer meeting.

Now, Mrs. Editor, although my besetting vice is long letter writing, I do not want to afflict your readers, and besides, "Joslar," while generally meek and obedient, does sometimes act rebellious when he thinks I'm not looking at him when he has to put on the hay rack to get a few letters to town. But I do want to tell Mrs. Grace a true little story.

When our new minister first came, one morning he said "A genuine case of religion is as contagious as the small-pox." A little, quiet woman, sad-faced and not fashionably dressed, who was seldom seen at any of the meetings, flashed a wonderfully intelligent look at the preacher, and I half guessed its meaning. Her husband, well-educated, intelligent and handsome, had, a number of years ago, begun drinking, and soon the farm (her inheritance) went, and the end, a drunkard's grave and a destitute, broken-hearted widow, did not seem far away. But she, with that true love that ought never to grow dim, began (or kept on) praying for him, and (perhaps the type-setter had better put a row of stars here, for it would take too long to tell how it all came about) but last week at prayer meeting the little, pale woman sat near the front and her husband sat beside her, and the last few weeks of Christian living was shown in his again handsome face, and when he rose up to speak he said: "I thank God for a Christian wife, and—" But the minister said "Amen" real loud, and nearly all the men did. "Joslar" did, too. And the little woman's face wasn't pale, but simply radiant, and we women were all glad.

So if the good old minister could not live a Christian without the prayer meeting, we may be obliged to. But no one can prevent our having sweet, little meetings alone with God and the baby. And if we look to the prayer meeting as a "means" of grace simply, we will find the one as effective as the other, and leave it with as sure a hope and as light a heart as though it had been held in a real church.

One more thought and I'm done, as the minister used to say when he had got half through with his sermon. I hold it a sin, a common ugly sin, (some sins seem romantic and interesting and unusual, you know, but this one is not), to work too hard to keep sweet while we are about it, and after it is over. What say you, ladies? With this I am sure you bid me a welcome adieu.
HOPE LONG DE FERD.

ADVICE TO RECENTLY MARRIED PEOPLE.

I take it for granted that among the readers of the MICHIGAN FARMER there are a goodly number who have recently embarked on the sea of matrimony, while many others, no doubt, will soon take this solemn step, and assume the grave and sacred duties and responsibilities of wedded life. To all such I wish to offer a word of earnest, friendly advice, for I feel an interest in your future welfare and happiness, and could scarcely forgive myself were I to neglect what seems to me to be a solemn duty.

My dear friends, you can not be ignorant of the fact that in many cases "marriage is a failure" and that many are the homes in which domestic strife and hatred have banished all joy and love. These homes, I dare say, were once filled with happy hearts, hearts which once burned with the fire of love, just as love now burns in your hearts. These homes contained souls to whom the future seemed very bright, just as the future now seems to you. I dare say that faith, hope, love and high aspirations once reigned supreme in these homes which are now occupied by cold irresponsible hearts.

Now, my friends, I ask you to sit down

and in all earnestness ask yourselves the question: Why these unhappy homes? why these cold irresponsible hearts? And when you satisfy yourselves as to the cause or reason, as you perhaps will, resolve before the Most High, that the shipwreck of these unfortunate ones shall be your landmark.

You have often noticed children at play, thus happily whirling away the moments, when lo! a disturbance is raised, a cry is heard, and happiness has turned to grief. If you are a looker-on, or if you make an investigation, you will become convinced that selfishness was at the root of the trouble—each wanted to possess a certain toy, or enjoy a certain privilege, and neither was magnanimous or unselfish enough to yield to the will of the other.

So, also, with men and women, with husband and wife, who, by the way, are nothing but children—grown up. It is selfishness that is at the root of their troubles, and banishes peace, joy and happiness from their household. Husband or wife or both are bent on pleasing self, regardless of the feelings of the other.

Young husband, young wife, now so full of hope, happiness and anticipation, do you wish to journey through life with your chosen companion, peacefully and tranquilly as upon a gentle stream? Then learn to live for others, and may your reward be complete!
FRANK LESLIE.

SHE VOICES HER APPROVAL.

As I sat down to read the MICHIGAN FARMER the first thing I looked for was the Household. First of all things that met my eye was the cordial invitation, so often given, for the readers of the Household to write. As I glanced down the page, this article "Art in the farm home" next came in view, and I wondered what the editor could find in that to be of much interest, but before I was half way through I began to nod my head in approval of so much truth and good common sense. It seemed at once that the invitation, and some more upon that same subject, was just suited to me to-day, and for the first time I, too, venture to step inside the door. How many times the women in the country do not get all the credit due them. I am sure there are many of our homes that could be made more pleasant, but as Mrs. Rockwood says, the farmer's wife has to get along with what she has to do with. Truthful to the end! And she not only has to, but she wants to, that is, the sensible ones do.

We would like to adorn our walls with new paintings, take up our old carpets and pull down the old shades, substituting new things in the place of the old ones, but we cannot do so, so must be content with turning, twisting, changing around, but they are the same old things after all. Yet the sensible woman will do without the nice things which she would like in order to keep her home.

An example. A neighbor of ours had 80 acres of land given him by his father and mother, who in their day kept within the line mentioned. They had their home till death claimed them. Now this same home has been advertised for three weeks to be sold under the mortgage. Still, last week a grand entertainment was given at their home. The parlors of that home are beautiful, but where soon will the home be and the fine things? People who are able to do so are foolish if they do not enjoy this world, but people who are not able should be careful.

I feel that there are as many country women with good tastes and refinement as there are city women, and did the average city people work for the home needed in old age as the country people do, there would be less poverty, less hardships when out of employment.

One word more and I will step out. There are such men as referred to in "reason third" but I hope only once in a while one. I think as a rule the good common sense farmer enjoys a nice home, and he knows it costs a little something for the house as well as out-doors. Still I think, too, as does the editor, that most men have a chance to express their opinion about all things indoors or out.
MRS. S. H.

LEAVING HOME.

There was a world of sadness in the woman's voice as she said, "Our son is going to leave home."

Since this son was a babe I had known the inner workings of this home. I believed it embodied all requisites for making home-staying children. Loving parents are not always judicious; these are. It was never a dead home, music, books, flowers, a bright cheerful mother, ever companionable, ever telling him by word, look, act, how dear he was to her—and how the home would be no home without him.

But the great industrial octopus had drawn him in. What a cruel system it has proven! How it has lured our sons and daughters from the farm! What does it give in return? Just living wages, and such slight possibilities for mental growth.

When we first awoke to the fact that our boys were going, we sent out this cry: What shall we do to keep our boys upon the farm? The answer came, make your homes more attractive, give them more recreation, make their lives happier. We heard it from pulpit, platform, and press.

The advice was followed. The aspect of the country home soon changed. We devised every method for their pleasure and comfort, but to no avail. They never left us so rapidly, so determinedly, as they do to-day, and the outside world never offered

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such poor return. But that deters them not.

Sometimes I wonder if we have not done too much or done what we have unwisely. I am reminded of the nursery rhyme of Johnnie Horner, "Who sat in the corner, and said, what a good boy am I." Johnnie's estimate of himself was based upon the number of plums in his Christmas pie, and it seems that our boys have construed our efforts in much the same way. We have succeeded in giving them a good opinion of themselves, but we have failed in ripening their judgment and in increasing their filial obligations.

The home life offers a chance for some day having homes of their own; the shop gives small hope of this. The boy sees, but heeds not, that the father is bent by years of labor and care; that the mother is heart-broken at his going, but he goes. Surely if we had planted better in the hearts of these children they would not have forsaken us in our old age. If we had borne with greater dignity and cheer the labor of our own industry, we would not so have antagonized them towards it.

I looked upon a large gathering of farmers a few days ago. They represented comfort, independence, and yet they were grumblers, and I knew it. We did not inherit this phase of character, we drifted into it. Our ancestors scorned to whine, even when adversity oppressed and privation marked them for its own, and out of those conditions came great men, with strong true hearts and willing hands. I know a few grand, noble boys to-day, but they were not pampered in the lap of luxury. They are boys who have cared for widowed mothers, and younger brothers and sisters, and have become types of a greater manhood for doing this.

One of the first steps that led to this unfortunate state of affairs was our letting the country school run down, and sending, for a few terms, our sons and daughters to the city schools. They rarely come back the same. We could give them all they receive in the way of instruction at the home school if we gave it proper attention, and not subject them to this weaning process. Strange that we never see a beam until we dash our heads against it, strange that our errors must become irreparable before we know we are fostering them.

FLINT.

LUCY SWIFT.

ATTENDING CHURCH UNDER DIFFICULTIES.

I, too, am a stranger in the Household circle, as we have taken the FARMER only a short time. But I have felt so much benefited by reading the Household chats from the different ladies that I think it should continue to be made interesting by the efforts of each farmer's wife in the State to contribute little items on different subjects pertaining to duties and experiences in farm life.

If this, my first attempt, should be welcome and should escape the waste basket, I shall try in the future to come again. But this time, a little more on church-going, in reply to Mrs. Grace. Her experience and mine on that subject are so similar, that her letter aroused my heartfelt sympathy toward her and all wives who may have like experience.

She asks, "Are there any of you who read the Household who like to attend church and yet can seldom go?"

My husband is not a lover of church-going and she only repeated his words when she said, "The man of the house says, 'Why, what hinders your going?' The horse is ready for you any time! I don't keep you at home." But going to church under difficulties is not so pleasant a task as one imagines, and in spite of your best efforts to make it a pleasure, you content yourself with practicing self-denial and remain at home. Before marriage it was my custom to try and attend church and Sabbath school as often as was possible, and so after marriage I thought, of course, I would continue to do so, and would venture to go alone, so will here relate my experience.

One Sunday I arose early and hurried with my morning work, and when done, prepared everything nicely for dinner, so that when I returned it would not take long to get it; asked my husband if he would at such a time please start a fire and put over the dinner which I had left prepared; but because I stayed to both church and Sabbath school, as I had always been accustomed to doing, when I returned home I found no fire started and my husband eating a bowl of bread and milk, and very much out of sorts because I staid to both church and Sabbath school.

So that is the only sermon (outside of funerals) I have heard in over seven years. Now don't you call that "going to church under difficulties?" Still I think there are members who attend our little church who think I do wrong not to attend church. But if they were in the same position I think they would do likewise.

My dear mother experienced like difficulties before she died, although I have reason to think she died a Christian. She was a pioneer of this village, and members of this little church would almost daily pass her door and not even call or give her a word of comfort or encouragement, when they could not but have known the views of the husband.

Oh! I would say a word to members of the church. If there be any in your midst who have been the ones to practice self-denial in this matter, do not pass them by without a word of comfort and sympathy, for you who can each Sabbath attend church with your family, do not know what a heavy cross it is to bear. Surely

there is no pleasure in going to church and expecting to be met with a frown on your return home.

JACKSON COUNTY.

M. E. S. C.

[We think you did right to give up attending church under the circumstances, hard as it seems for one who enjoys doing so. But one need not give up trying to be a Christian because it is inexpedient to attend service. Neglect neither your Bible nor your private devotions on this account.—Ed.]

BREAD.

"Do we comprehend, when our daily prayer is said, How great a thing we ask of God, when we ask for our daily bread?"

If it is true, as "Peveril of the Peak" told us not long since, that we are fast becoming diseased and dyspeptic as a nation from neglect of the art of bread-making, it is surely time that something should be done about it.

Now there is no need that the "old-fashioned, wholesome bread of the past" should be "supplanted by a sour, sticky mass," and we know it is not, in the majority of our country homes. Indeed, we feel like hazarding the opinion that Peveril of the Peak is a poor, solitary old bachelor, whose digestive organs have been ruined by eating the results of his own handiwork, and we would suggest that "If married life has trouble, single life has double." The moral is obvious.

But why is it that in reading over the list of contributed recipes we so seldom find one for making bread? Here is the way it is done in one family that we know of.

At three o'clock P. M. place in a quart bowl one and one-half cakes of "yeast foam." Add enough luke-warm water to just cover, and let stand one hour. At the expiration of this time mash carefully with spoon to be sure no lumps remain, and add enough luke-warm water to fill the bowl nearly half full; stir in sufficient flour to make a thick batter, and beat hard for five minutes. Set in a moderately warm place to rise. At eight P. M. it should be very light. A half hour previous to this time pare and put to boil three medium-sized potatoes, sliced. When done, pour off the water, mash the potatoes, add the water in which they were boiled and enough more to make two quarts in all. Fill a medium-sized bread pan half full of flour, make a hole in the middle and pour in the potato water, which should be luke-warm, and the bowl of yeast. With a strong iron spoon stir in gradually enough of the flour to make a moderately stiff batter, and beat vigorously. Then dust enough flour over the whole to cover it well. Turn a common pan over it, pressing it slightly into the flour, wrap carefully and set near the stove but do not let it get too warm.

At six A. M. it should be very light. Now add one tablespoonful of salt, one of sugar, one (scant) of lard, and mix in the flour remaining in the pan, adding more if necessary. Knead thoroughly for twenty minutes and set away to rise. When light (the pan should be nearly full) divide into loaves, knead very lightly, place in greased tins, which should not be quite half full, let rise until nearly full and bake from forty to sixty minutes according to size of loaf. Remove from pans and wrap carefully in several thicknesses of cloth. Given a good quality of flour and fresh yeast, careful attention to these directions must result in sweet, delicious bread.

Occasionally we like a loaf or two of corn bread, and this is one way of making it: When making white bread save half a bowlful of "sponge." Put a pint and a half of sweet milk on the stove; when nearly boiling hot, stir in enough fine corn meal to make a stiff mush. Remove from the stove and let cool. Make a hole in the center of a small pan of flour, pour in the cooled mush, add the half bowl of sponge, a good half tea cup of sugar, one egg, a heaping teaspoonful of butter, the same of salt, and mix in enough flour to knead like white bread. Let it rise; then divide into loaves and proceed as with white bread, only remembering that it will need a longer time to rise, and it should also be baked a little longer.

Then sometimes "Uncle Ezra" likes a STEAMED LOAF.

Take one cup of buttermilk, one of corn meal, one of flour and one-half cup molasses. Add one teaspoonful of soda and one of salt. Mix well and steam in a well-greased, covered tin two and one-half hours. Set in oven fifteen minutes to dry the crust. Perhaps at some future time we will give some ways of making graham bread.

AUNT JENNIE.

[Please send the recipes. Too little attention is paid to bread, and proportionately too much to pastry by modern housewives.—Ed.]

BEAN SOUP.

Put two quarts of dried white beans into soak the night before you make the soup, which should be put on as early in the day as possible. Take five pounds of lean fresh beef—the coarse pieces will do. Cut up the meat and put it into your soup pot with the bones belonging to it. Add a pound of bacon cut very small. Season the meat with pepper and salt, and pour on it six quarts of cold water. As soon as it boils take off the scum and put in the beans (having first drained them) and a head of celery cut small, or a tablespoonful

of pounded celery seed. Boil it slowly till the meat is done to shreds and the beans all dissolved. Then strain it through a colander into the tureen and put into it small squares of toasted bread with the crust cut off. Some prefer it with the beans boiled soft, but not quite dissolved. In this case do not strain it, but take out the meat and bones with a fork before you send it to table.

FRIAR'S CHICKEN.

Cut up four pounds of knuckle of veal; season it with pepper and salt; put it into a soup pan and let it boil slowly till the meat drops from the bone. Put in water enough to cover the meat. When cooled, strain it off. Have ready a pair of young fowls, and cut up as you carve them at table. Season them with pepper and salt. Put them into the soup; add a handful of chopped parsley and let them boil slowly. When the pieces of chicken are all quite tender, have ready five eggs, well beaten. Stir the eggs into the soup, and take it immediately off the fire lest it curdle. Serve up the chicken in the soup. Serve hot. Rabbits may be substituted for fowls. I.L.K.A.

TO BOIL SALT CODFISH.

The day previous to that on which it is to be eaten, take the fish about four o'clock in the afternoon and put it into a kettle of cold water, then place it on back of stove, so as to keep it blood-warm; next morning at ten, take out the fish and put it into a kettle of fresh cold water. Place the kettle again on back of stove until about twenty minutes before dinner. Then put it over a brisk fire, and boil it hard for twenty minutes. When done, drain it, and cut it into large pieces and send them to table on a platter, garnished around the edge with hard-boiled eggs, either cut in half, or in circular slices, yolks and whites together. Have ready, in a small sauce tureen, egg-sauce made with drawn butter thickened with hard-boiled eggs chopped fine. Place on one side of the fish a dish of mashed potatoes, on the other side a dish of boiled parsnips.

The usual way of preparing salt codfish for eating when it comes to table, is (after picking out the bones) to mince it fine on your plate and mix it with mashed potatoes, parsnip or egg sauce, seasoning it to your taste. What is left may be prepared for breakfast next morning. It should be put into a skillet, which must be well buttered, and set over hot coals to warm and brown, or it may be made up into small cakes and fried. You may add onions boiled and chopped fine.

TO STEW BEEF.

Take a good piece of fresh beef. It must not be too fat. Wash it, rub it with salt, and put it into a pot with barely enough water to cover it. Set it over a slow fire, and after it has stewed an hour, put in some potatoes pared and cut in half, and some parsnips, scraped and split. Let them stew with the beef till quite tender. Turn the meat several times in the pot. When all is done, serve up the meat and vegetables together, and the gravy in a tureen, having first skimmed it. This is a good family dish.

TO DRESS BEEF KIDNEY.

Having soaked a fresh kidney in cold water and dried it in a cloth, cut it into mouthfuls, and then mince it very fine. Dust it with flour. Put some butter into a stew-pan over a moderate fire, and when it boils put in the minced kidney. When you have browned it in the butter, sprinkle on a little salt and cayenne pepper and pour in a very little boiling water. Add a large tablespoonful of mushroom catsup, or of walnut pickle. Cover the pan closely, and let it stew till the kidney is tender. Send it to table hot in a covered dish. It is generally eaten at breakfast.

CLARA MERWIN

HOUSEHOLD HINTS.

Put a little sugar in the water with which meats are basted.

All table linen should be closely examined each week for fruit stains. Try boiling water first; if this does not start them, use oxalic acid in water, rinsing out immediately in clear water. Table linen should never be allowed to remain stained.

Never allow dishes to become hot in the oven. It spoils the glazing, causing it to crack, and gives them a bad odor. Cases of poisoning have been traced to the use of such dishes.

To avoid danger of breakage dip the glassware into hot water so that both outer and inner surfaces touch at the same time, thus making the expansion evenly. The most delicate glass will not break if this rule is followed.

CONSUMPTION CURED

An old physician retired from practice, had placed in his hands by an East India missionary the formula of a simple vegetable remedy for the speedy and permanent cure of Consumption, Bronchitis, Catarrh, Asthma and all Throat and Lung Affections; also a positive and radical cure for all Nervous Complaints. Having tested its wonderful curative powers in thousands of cases, and desiring to relieve human suffering, I will send free of charge to all who wish it, this recipe, in German, French or English, with full directions for preparing and using. Sent by mail, by addressing, with stamp, naming this paper, W. A. NOYES, 820 POWERS' BLOCK, ROCHESTER, N. Y.

MOTHERS

Your children cured by wetting. Sample free. Dr. F. E. MAY, Bloomington, Ill.

A Wonderful Statement

From Mrs. McGillas to Mrs. Pinkham.

I think it my duty, dear Mrs. Pinkham, to tell you what your wonderful Compound has done for me.

I was dreadfully ill—the doctors said they could cure me but failed to do so.

I gave up in despair and took to my bed. I had dreadful pains in my heart, fainting-spells, sparks before my eyes—and sometimes I would get so blind, I could not see for several minutes.

I could not stand very long without feeling sick and vomiting. I could not breathe a long breath without screaming, my heart pained so.

I also had female weakness, inflammation of ovaries, painful menstruation, displacement of the womb, itching of the external parts, and ulceration of the womb. I have had all these complaints.

The pains I had to stand were something dreadful. My husband told me to try a bottle of Lydia E. Pinkham's medicine, which I did, and after taking it for a while, was cured. No other kind of medicine for me as long as you make Compound. I hope every woman who suffers will take your Compound and be cured.—Mrs. J. S. MCGILLAS, 113 Kilbarn avenue, Rockford, Ill.

You Dye in 30 minutes

Turkey red on cotton that won't freeze, boil or wash out. No other will do it. Carpets, dresses, capes and clothing made to look like new. No failures with Tonk's French Dyes. Send 40c. for six packages or 10c. for one. Any color for wool or cotton. Big pay agents. Write quick.

French Dye Co., Box 77, Vassar, Mich.



How to Earn a Camera.

Just go among your friends and sell to lbs. of Baker's Teas, Spices or Baking Powder and earn a Splendid High-Grade Camera; or you can sell a total of 50 lbs. for a Gold Watch (Waltham or Elgin) and a Chain; 75 lbs. for a Boys' Bicycle; 100 lbs. for a Girls' Bicycle; 200 lbs. for a High-Grade Bicycle; 25 lbs. for a Solid Silver Watch and Chain; 10 lbs. for a Solid Gold Ring; 25 lbs. for an Autoharp; 15 lbs. for a pair of Lace Curtains.

We pay the express or freight if cash is sent. Send address for particulars.

W. G. BAKER (Dept. 19), SPRINGFIELD, MASS.



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Chicago, St. Louis & all points West.

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Popular routes between Detroit, Lansing, Bay View, Grand Rapids, Petoskey, Manistee, Muskegon.

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Lve. EAST VIA PORT HURON. Arr.

7:55 am Mt. Clemens, Pt. Huron & North 9:40 am

10:15 am Toronto, Montreal and Portland 1:25 pm

1:05 pm Mt. Clemens, Pt. Huron & North 1:30 pm

4:30 pm St. Clair, Romeo and Pt. Huron 6:00 pm

10:35 pm Buffalo, Toronto and New York 6:45 am

EAST VIA WINDSOR.

7:45 am Buffalo, New York and Boston 9:30 pm

12:00 m Toronto, Buffalo and New York 1:40 pm

6:40 pm London and Inter Stations 8:40 pm

11:25 pm Suspension Bge, Buffalo & N. Y. 10:00 am

DETROIT AND MILWAUKEE DIVISION.

6:55 am Saginaw, Gd Haven & Muskegon 9:25 pm

11:30 am Gd Rapids, Gd Haven & Chicago 8:55 pm

4:35 pm Saginaw, Gd Rapids and B Creek 11:50 am

5:45 pm Pontiac & Intermediate Stations 8:10 am

8:00 pm Lansing, Battle Creek & Chicago 7:15 am

10:45 pm Gd Rapids, Gd Haven & Muskegon 8:05 am

Daily except Sunday. *Daily.

Legal Department.

CONDUCTED BY EARL D. BABST
56 Moffat Building, Detroit.

SPEARING ON MAPLE RIVER FORBIDDEN.
—I. M. B., Hubbardston, Mich.:—Is there any law prohibiting spearing fish in Maple River?—The law regarding the taking of fish in Maple River is as follows: It is unlawful to catch or kill fish in Maple River and tributaries in this State with any device of any kind whatsoever, except hook and line. Penalty, fine not to exceed \$25 and costs, or imprisonment not to exceed 30 days. It is prima facie evidence under this act if any person is found upon such waters with spear, net, trap net, jack, set lines or artificial light of any kind, or dynamite, giant powder or any explosive substance or combination of substances.

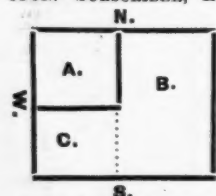
DRAIN STATUTE—CROSSING A KNOLL.
—H. H., Saginaw Co., Mich.:—Can a drain commissioner cross a knoll or hill in level land unless there be a swamp or pond at such place?—If application has been made to a drain commissioner, signed by no less than ten freeholders of the township or townships in which such drain, or the lands to be drained thereby and to be assessed therefor, may be situated, thirty per cent of whom shall be owners of lands traversed by such drain, the commissioner may cross any knoll or hill which it is necessary to cross in laying out the drain in conformance with the general description of the route in the application.

PRIVATE RIGHT OF WAY—USE WITH OWNER'S CONSENT IS MERE LICENSE AND DOES NOT ESTABLISH PERPETUAL RIGHT TO SAME.—A SUBSCRIBER, Armada, Mich.:—B. has had accommodation by being allowed to pass from his 40 acres across A's 40 acres to B's 80 acres for a number of years. A line fence is being built between B's 40 acres and his 80 acres on the east and south sides of A's 40 acres. B. has a way of getting to his 80 acres by road. Can he hold possession of this passage across A's land, or can A. go ahead and put up the fence?—A. can erect the proposed fence enclosing his land whenever he pleases. The mere fact that A. has allowed B. to cross his land as a matter of accommodation, when B's land is accessible from the highway, would not give B. any rights to a private way.

FAKE ADVERTISEMENTS—LIABILITY OF PERSON RECEIVING GOODS.—SUBSCRIBER, Branch Co., Mich.:—I. answered an advertisement which appeared in a Detroit daily paper, in which H., Kalamazoo, Mich., offers to send a prescription free to anyone requesting it. In a few days an express package came for me from H. with \$3.50 charges. Am I obliged to pay it?—No. No one can force another to receive or pay for goods which he has not contracted for. 2. If the postman had brought it to me and had paid charges without my order, could he collect from me?—No. 3. If H. were to send the package through the mail and I should take it out of the post-office, could he collect of me?—If you did not order the article and did not make use of it, you could avoid any liability in the matter by putting it aside and notifying the sender that you held it subject to his order.

LIABILITY OF ENDORSER ON NOTE—NOTICE NECESSARY IN ORDER TO HOLD.—G. O., Onekama, Mich.:—A. gives a note to B. for \$150. C. guarantees its payment. A. fails to meet the note when due. C. does not receive notice of the note having been dishonored until 10 days have elapsed. Can C. be held?—Before a note is protested there must be a demand on the maker and a refusal to pay on his part. After the protest, notice must be given to the endorser in due time without delay in order to hold him. This notice may be given personally or left at his home or his place of business or sent by mail. It must state that the note was duly presented and payment refused by the maker; it must describe the note and declare intention of holding the endorser. There has been much discussion as to what is a reasonable time in which notice must be given, but the modern rule clearly is that the next day after maturity is the latest for that purpose. If notice is sent by mail it should be mailed on the day the note matures. In the case you cite, C. could not be held, as 10 days is clearly not a reasonable time in which to serve notice of dishonor.

EFFECT OF SALE OF LAND AFTER DIVISION OF FENCE—STEPS TO COMPEL BUILDING OF SHARE OF PARTITION FENCE AGREED UPON.—SUBSCRIBER, Litchfield, Mich.:—



1. A. and B. own land according to diagram. A. built and keeps the fence on his south line, and B. the fence on the east line of A. B. sells to C. a strip of land on the southwest corner of the farm directly south of A. Does C. secure half of the line fence now standing, or can A. remove half of the fence between himself and C., and compel C. to rebuild anew his half?—Unless A. and B. had divided the fences between their lands by written agreement,

duly recorded, or the same had been divided by action of the fence viewers, A. can do with the fence on his south line as he pleases. Should he tear it down, C. can ask the fence viewers to divide the fence and each will be required to build and keep in repair one-half of the fence. The arrangement between A. and B., unless recorded or divided by fence viewers, is not binding on A. and C. C. does not gain ownership in half of the fence. 2. X. and Y. join; line fences undivided. They divide the line equally and each agrees to build his share, and now Y. refuses to build his part. Can X. compel Y. to build his part of the fence? If so, how must he proceed? Must X. have his line fence recorded before commencing proceedings?—First, record your agreement in township clerk's office; Second, make formal demand of Y. to build fence according to agreement; Third, apply to two or more fence viewers of township where land lies, who will assign to Y. the share he should build and direct the time within which it shall be erected. This assignment must be in writing and recorded; Fourth, in case of Y.'s refusal or neglect to carry out assignment of fence viewers, X. may erect the same, and the expense incurred can be collected in the same manner that taxes are collected. This is a slow but safe way. A quicker method would be to record agreement, erect fence, and sue for its value on agreement.

The Markets.

WHEAT.

The market has again reached the danger line, and speculators are predicting a set-back. Values Thursday were the highest for two months. The war scare in Europe, with reports of crop damage, caused the advance. The advance is reflected in higher prices abroad, Liverpool, Paris and Berlin all reporting advances and a firm tone in the trade. The following table exhibits the daily closing sales of spot wheat in this market from February 25 to March 18 inclusive:

	No. 1	No. 2	No. 3
	White.	Red.	Red.
Feb. 25.....	86 1/2	86 1/2	82 1/2
" 26.....	85 1/4	85 1/4	81 1/4
" 27.....	85 1/4	85 1/4	81 1/4
Mar. 1.....	86 1/2	86 1/2	82 1/2
" 2.....	87 1/4	87 1/4	83 1/4
" 3.....	86 1/2	86 1/2	82 1/2
" 4.....	87 1/4	87 1/4	83 1/4
" 5.....	87 1/4	87 1/4	83 1/4
" 6.....	87 1/4	87 1/4	83 1/4
" 7.....	86 1/2	86 1/2	82 1/2
" 8.....	86 1/2	86 1/2	82 1/2
" 9.....	86 1/2	86 1/2	82 1/2
" 10.....	85 1/4	85 1/4	81 1/4
" 11.....	85 1/4	85 1/4	81 1/4
" 12.....	86 1/2	86 1/2	82 1/2
" 13.....	88 1/2	88 1/2	84 1/2
" 14.....	89 1/2	89 1/2	85 1/2
" 15.....	90 1/2	90 1/2	86 1/2
" 16.....	90 1/2	90 1/2	86 1/2
" 17.....	90 1/2	90 1/2	86 1/2
" 18.....	90 1/2	90 1/2	86 1/2

The following is a record of the closing prices on the various deals in futures each day during the past week:

	May.	July.
Friday.....	87 1/4	74
Saturday.....	89 1/4	74 1/4
Monday.....	90 1/4	75
Tuesday.....	90 1/4	75 1/4
Wednesday.....	91 1/4	76 1/4
Thursday.....	92 1/4	76 1/4

The visible supply of wheat on Saturday last, as compiled by the N. Y. Produce Exchange, was 41,449,000 bu., a decrease of 1,319,000 bu. over the amount reported the previous week.

There is considerable alarm among the farmers of Kansas and Western Missouri over the threatened damage to the wheat crop from alternate freezing and thawing. The damage up to date is mainly in what is known as the golden wheat belt of Kansas, the worst coming from Junction City, Abilene, Salina and Beloit. Southern Kansas has been less affected. It is not believed, however, that with good conditions from now on the crop will be seriously hurt. The acreage in Kansas is very large, surpassing even that of last year.

The aggregate supplies of breadstuffs in Europe and about therefor and in store in the United States and Canada on March 1, 1897, were equal to 155,504,900 bu. against 173,497,700 bu. on February 1 and 191,887,000 bu. on March 1, 1896. The decrease during February was equal to 17,992,800 bu. against a decrease of 11,120,800 bu. during January and a decrease of 10,445,300 bu. during February, 1896. The aggregate supplies are 36,383,100 bu. less than reported one year ago.

The movement of wheat from first hands in the United States from July 1 to March 1 was about 138,000,000 bu. against 160,000,000 bu. for the corresponding time in 1896-6. The exports of flour and wheat during the same period were about 115,000,000 bu. against about 90,000,000 bu. last year. The official visible supply on March 1 was about 21,000,000 bu. less than reported one year ago. This would indicate that the wheat crop of the United States for 1896 was somewhat less than reported for 1895—467,000,000 bu. However, allowing 450,000,000 bu. as a conservative estimate of the crop—which the future movement will no doubt confirm—and allowing 113,000,000 bu. for the supplies in all hands on July 1, 1896, the aggregate supplies would be 563,000,000 bu. for domestic wants and seed, 115,000,000 bu. for exports to date and 55,000,000 bu. for supplies on hand July 1, 1897, making an aggregate accounted for of 533,000,000 bu. and leaving for export during the current five months about 28,000,000 bu.—Chicago Trade Bulletin.

Liverpool Corn Trade News: Corn reports from Russia are less favorable. We hear to-day, via London, from firms with connections in South Russia, that the crops are lost in the Azoff districts and badly damaged in the Caucasus; also other reports have reached us, via Berlin, saying that the Russian agricultural ministry has had reports of very unsatisfactory crops in twenty-two governments. Our own Odessa correspondent, writing under date February 20, states that reports of winter-sown wheat in most districts were not encouraging, but considered it was then too early to judge properly. Mail advices from Argentina bring satisfactory news of the wheat crop of the province of Buenos Ayres and the estimate of the yield in the south of the province is for 300,000 tons. There is no better news about the crops in other parts of the republic. Some districts hope to harvest some corn, but the locusts and drouth have done great damage.

The St. Paul Plow Co., of St. Paul, Minn., went into the hands of a receiver last week. The assets aggregate \$100,000 and the liabilities are heavy.

DAIRY PRODUCTS.

BUTTER.

The butter market has held steady and firm since our last report, with choice dairy in the best demand, and selling at even with ordinary creamery. Quotations in this market range as follows: Creamery, 18@20; fancy dairy, 15@17; fair to good dairy, 12@14; low grade, 7@10c. At Chicago the market is reported fairly active for all fresh makes, and values hold steady at last week's range. For the season, prices are low, and show, the extent to which winter dairying has been extended within the past three years. Quotations in that market on Thursday were as follows: Creameries—Extras, 18c; firsts, 16@17c; seconds, 14@15c. Dairies—Fancy, 16c; firsts, 14@15c; seconds, 12@13c; imitation creameries, firsts 13@14c; ordinary makes, 10@11c; packing stock, fresh, 8c; roll butter, choice, 10c; off stock 8@9c. The New York market is in better shape than a week ago, light receipts and a steady demand from all sources having strengthened the trade. Fancy creamery is closely sold up and very firm, and the same may be said of choice dairy. Stocks are not increasing, and prices are regarded as low for the season. We do not think, however, taking the condition of trade throughout the country, that an advance could be maintained for any length of time. The export demand is light. Quotations in that market on Thursday on new butter were as follows:

EASTERN STOCK.

Eastern creamery, fancy.....	18 @
Eastern creamery, choice.....	15 @17
State dairy, h. f. tubs, fancy, fresh.....	17 @18
State dairy, h. f. tubs, choice.....	15 @16
State dairy, h. f. tubs, fair to good.....	12 @14

WESTERN STOCK.

Creamery, Western, fancy.....	19 @
Creamery, Western, choice.....	17 @18
Creamery, Western, fair to good.....	13 @16
Dairy, Western, firsts.....	13 @14
" thirds to seconds.....	8 @11
Western imitation creamery, choice.....	15 @15 1/2
Western imitation creamery, fair to good.....	10 @13
Factory, fresh, choice.....	11 1/2 @12
Factory, fresh, fair to good.....	7 @10 1/2
Rolls, fresh, choice.....	13 @
" common to good.....	8 @11

CHEESE.

Upon the whole, the cheese markets of the country are in a satisfactory position, although there has not been any further improvement in values. In this market quotations for the best full creams still range from 10 1/2 @11c, with a quiet but steady tone to the trade. At Chicago, prices are the same as a week ago, with ordinary quality barely steady while the finest grades are in light supply and firm. Stocks are light, and this has a strengthening effect upon the market. Quotations in that market on Thursday were as follows: Full creams—Young Americas, 9 1/2 @10c; twins, 8 1/2 @10c; brick, full cream, 7 1/2 @8c; Swiss, fair to choice, 8 1/2 @10c; Limburger, good to choice, 8@9c. The New York market seems to be in better shape than a week ago, and the reasons are thus summarized by the N. Y. Tribune: "The home trade demand, while not showing any special force, orders generally arriving confined to small lots as wanted for current use, still has been a little more general than for several weeks past, and the aggregate amount has been very satisfactory. Foreign advices have been more encouraging, reporting a little better demand, and cable shows a recovery of 6d. Exporters here have shown more interest, and several cables have been sent over on fancy cheeses. One exporter has shipped about 1,000 boxes and another some 400 boxes of stock that had been carried in store, in addition to which fresh purchases have been made of close to 1,000 boxes, mostly of grades a trifle under fancy. Holders are quite firm and confident for rather desirable cheese, and taking the market as a whole the outlook appears a little brighter than a fortnight or so ago." Quotations in that market on Thursday were as follows:

New State, full cream, large, white, fancy	@12 1/4
September.....	@12 1/4
Do do late made, prime.....	11 1/4 @12
Do do good to choice.....	11 1/4 @11 1/4
Do do colored, fancy.....	@12 1/4
Do do do late made, prime.....	11 1/4 @12
Do do do choice.....	11 1/4 @11 1/4
Do do do fair to good.....	9 @11
Do do small, fancy, white.....	12 1/4 @12 1/4
Do do colored, fancy.....	12 1/4 @12 1/4
Do do good to choice.....	11 1/4 @12
Do do common to fair.....	9 @11
Light skims, choice, small size.....	@10 1/4
Do do large.....	@10 1/4
Do do common to prime.....	5 @9
Full skims.....	3 @4

At Liverpool on Thursday quotations on finest American cheese were 57s. 6d. per cwt for choice American, both white and colored. This is an advance of 6d. from the price as quoted a week ago, and the market is reported as showing a decided improvement.

DETROIT PRODUCE MARKET.

DETROIT, March 18, 1897.

FLOUR.—Quotations on jobbers' lots in barrels are as follows:
Straights..... \$4 50 @
Clears..... 4 35
Patent Michigan..... 4 80 @ 4 90
Rye..... 2 75
Low grade..... 3 75
Buckwheat..... 3 00

CORN.—No. 2, 23 1/4c; No. 3, 23c; No. 2 yellow, 25c; No. 3 yellow, 25c. The visible supply of corn on Saturday last was 25,755,000 bu., an increase of 418,000 bu. from the previous week.
OATS.—Quoted as follows: No. 2 white, 20 1/4c; light mixed, 19 1/2c; No. 3 white, 19c. The visible supply of oats on Saturday last was 13,538,000 bu., a decrease of 195,000 bu. since the previous Saturday.

BARLEY.—Quoted at 55@56c per 100 lbs. The visible supply on Saturday last was 3,135,000 bu. a decrease of 75,000 bu. since the previous Saturday.
RYE.—Quoted at 36c per bushel for No. 2. No. 3 sells at 33c. The visible supply of rye on Saturday last was 3,616,000 bu., an increase of 42,000 bu. since the previous Saturday.

CLOVERSEED.—Prime spot, 55 1/2c per bu.; No. 2 quoted at 44 @45.

TIMOTHY SEED.—Quoted at \$1 35 per bu.
FEED.—Bran, \$11; coarse middlings, \$11; fine middlings, \$12 00; corn and oat chop, \$9; cracked corn, \$10; coarse cornmeal, \$10. These prices are for car load lots; small lots at 1c per ton higher.

BUTTER.—Market steady. Quoted at 15@17c for best dairy; good, 12@14c; common to fair 6@10c; creamery, 12@20c.

CHEESE.—New Michigan full cream, 10 1/2 @11c.
BEANS.—Quoted at 90@95c per bu. for hand picked in car lots; unpicked, 40@55c per bu. At New York quotations on Thursday were as follows: Marrow red bu, \$1 09 @1 12 1/4; medium, 75@85c; pea 70@80c; red kidney, choice, \$1 05 @1 27 1/4; white kidney, choice, \$1 10. Market has become steadier.

EGGS.—Strictly fresh selling at 10@10 1/2c per doz.

ONIONS.—Michigan, \$1 21 @1 50 per bu.
POTATOES.—Quoted at 22@27c per bu. At Chicago quotations on Thursday were as follows: Early Rose, 19@21c; Hebrons, 19@22c; Burbanks, 22@25c per bu.

APPLES.—Quoted at \$1 21 @1 50 per bbl for common; good \$1 75; no fancy on sale. Market steady.

CRANBERRIES.—Quoted at \$1 75 per bu.
DRIED APPLES.—Sun-dried, 2@2 1/4c; evaporated, 4 1/2 @5c per lb.
MAPLE SYRUP.—Quoted at 65@70c per gallon for pure.

HONEY.—Quoted at 10@11c in sections, for white, and 8@9c for dark comb; extracted, 5@6 per lb. At Chicago it is quoted as follows: White clover, 1-lb sections fancy, 10c, broken combs, 7@9c; amber to dark comb, 7c; extracted, 5@7c per lb.
BEE SWAX.—Prime, 23@24c per lb.

HIDES.—Green, No. 1, 6c; No. 2, 5c; cured, No. 1, 7c; No. 2, 6c; calf No. 1, green, 8c; cured, No. 1, 8c; No. 2, green, 7c; No. 2 cured calf, 7c.

POULTRY.—Dressed chickens, 9@9 1/2c; dressed turkeys, 12 1/2 @13c; dressed ducks, 12@12 1/2c; geese, 10c. Live quoted 1@2c below the above figures.

Quotations at Chicago are: Dressed—Turkeys, 12 1/2 @13c; young gobblers 10@11c; chickens, old and young hens, 8@9c; roosters, old, 5c; ducks, 9@12c; geese, 7@8 1/2c per lb.

DRESSED VEAL.—Quoted at 6@6 1/2c for ordinary to good carcasses, and 7@7 1/2c for fancy.
DRESSED HOGS.—Quoted at \$1 per cwt, with \$4 50 paid for fancy.

PROVISIONS.—Quotations are as follows:
Mess pork..... \$8 50 @
Short clear..... 10 00
Lard in tierces, 7@7 1/2c, compound..... 5 1/2
Pure lard, 7@7 1/2c..... 5 1/2
Hams, 7@7 1/2c..... 9 @10
Shoulders, 7@7 1/2c..... 5 1/2
Choice bacon, 7@7 1/2c..... 7 1/2
Extra mess beef, new 7 bbl..... 7 00
Plate beef..... 7 75
Tallow, 7@7 1/2c..... 3

OILS.—Raw linseed, 32c; boiled linseed, 35c per gal. less 1c for cash in 10 days; extra lard oil, 42c; No. 1 lard oil, 33c; water white kerosene 8 1/2c; fancy grade kerosene, 9 1/2 @10 1/4; deodorized gasoline, 9c per gal.; turpentine, 34 1/2c per gal., in barrel lots, less 1c for cash in 10 days. Less quantities, 40 per cent.

HARDWARE.—Axes, single bit, bronze, \$5 50; double bit, bronze, \$10; single bit, solid steel, \$8 50; double bit, solid steel, \$10 50 per doz; bar iron, \$15 50 rates; carriage bolts, 75 per cent off new list; tire bolts, 70 and 10 per cent off new list; painted barbed wire, \$1 75; galvanized barbed wire, \$2 05 per cwt; single and double strength glass, 70 and 5 per cent off list; No. 24 sheet iron, \$2 50 rates per cwt; galvanized, 75 and 10 per cent off list; No. 1 annealed wire, \$1 45 rates. Wire nails, \$1 60; steel cut nails, \$1 60 per cwt, new card.

COFFEE.—City prices are: Rio, roasting, 15c; fair, 16c; good, 18@19c; prime, 20c; choice, 22@23c; fancy, 25 1/2c; Mocha, roasted, 25c; Santos, roasted, 24c; Mocha, roasted, 29c; Java 32c.

LOOSE HAY.

The following is a report of the sales of loose hay at the Western Hay Scales for the week ending noon, March 18, with the price per ton on each load:

Friday—8 loads: Two at \$9; two at \$7; one each at \$9.50, \$8.50, \$6.75 and \$6.
Saturday—8 loads: Two at \$8.50; two at \$6; one each at \$12, \$10, \$7 and \$5.
Monday—9 loads: Two at \$9; two at \$8; one each at \$11, \$9.50, \$8.50, \$5.75 and \$5.50.
Tuesday—21 loads: Three at \$9; three at \$8.50; six at \$8; two at \$7.50; three at \$7; two at \$6.50 and two at \$6.
Wednesday—10 loads: Four at \$9; two at \$8; one each at \$9.50, \$7.50, \$7 and \$6.
Thursday—2 loads: One each at \$9 and \$5.75.

DETROIT LIVE STOCK MARKET.

Michigan Central Stock Yards.

DETROIT, Mich., Mar. 18, 1897.

CATTLE.

Thursday's receipts of cattle numbered 669 head, through 38, on sale 631; as compared to 488 one week ago. The quality average about the same as for the last, being mostly fair to good butchers. Trade active and all changed hands at about last week's prices. \$4 12 1/2 was the highest price paid for 3 good butchers steers av 1,180 lbs and one weighing 1,170 lbs at \$4 25, but the bulk changed hands at prices ranging from \$2 50 to \$4; old thin cows (canners) and common butchers, \$1 50 @2 40; bulis, \$2 50 @3 35; stockers, \$2 50 @3 25; feeders, \$3 @3 65. Veal calves receipts were 219, active, but lower sales, mostly at \$4 25 @5 per hundred lbs, a few choice brought \$5 25. Milch cows and springers rather slow and \$2 50 @3 per head lower, range from \$28 to \$42 each.

Roe & Holmes sold Robinson 17 good mixed butchers av 906 at \$3 40, and 4 fair butcher cows av 1,140 at \$2 60; also a heifer to Schleicher weighing 630 at \$3.

Glenn sold Loosemore 3 fat cows av 1,066 at \$3, and 3 heifers av \$13 at \$3 50.

McHugh sold Fitzpatrick 17 mixed butchers av 780 at \$2 50, and 3 coarse do av 1,333 at \$2 75.

Spicer & Merritt sold Bussell 3 good butchers steers av 1,180 at \$4 12 1/2.

Adams sold Sullivan a bull weighing 720 at \$2 80, and 6 feeders av 808 at \$3 50; to Fitzpatrick 13 steers and heifers av 820 at \$3 50, and 2 mixed butchers av 805 at \$3.

Clark & Beihmer sold Loosemore 4 mixed butchers av 930 at \$3, and 3 common butchers cows av 936 at \$2 40.

Estep sold Bussell 2 fat cows av 1,060 at \$2 90, and a steer weighing 810 at \$3 50; to Sullivan 2 oxen av 1,850 at \$3 50, and 5 good butchers steers av 1,120 at \$4.

Sprague sold Schleicher a steer weighing 810 at \$3 60, and 1 do weighing 650 at \$3 30.

Roe & Holmes sold Schleicher 6 mixed butchers av 750 at \$3 15; 10 steers and heifers to Cook & Fry av 851 at \$3 50, and a cow weighing 1,300 at \$2 50.

Pine sold Magee 5 fair butchers cows av 1,114 at \$2 60, and bull weighing 1,160 at \$2 50, also 5 fair butchers steers to Caplis av 930 at \$3 50.

Howe sold Sullivan 3 steers av 1,020 at \$3 85, and 3 do av \$30 at \$3.

Lewis sold Mich Beef Co 3 fat cows av 856 at \$3, and 4 steers and heifers av 847 at \$3 50.

McKinley sold Loosemore 4 fair butchers cows av 920 at \$2 50, and 2 bulls to Mohn av 755 at \$2 75.

Luckie sold Fitzpatrick 2 heifers av 835 at \$3 50, and a fat cow weighing 1,000 at \$2 75.

Bergen & T sold Schleicher 6 stockers av 550 at \$3; 3 fat cows to Loosemore av 1,300 at \$3, and 3 do av 1,143 at \$2 60.

Weeks sold Magee 14 common butchers av 907 at \$2 40.

Smith sold Hammond Stock Farm a bull weighing 870 at \$3.

Hogan sold Caplis 3 fat cows av 876

White sold Magee 3 mixed butchers av 833 at \$3.20.
 Robb sold Caplis 5 fat cows av 974 at \$3.
 Ackley sold Loosemore 4 fat cows av 977 at \$2.75; 8 heifers av 966 at \$3.60; to Sullivan 3 steers av 743 at \$3.25; 5 do av 1,256 at \$3.60, and a bull weighing 1,730 at \$2.75.
 Weeks sold Mich Beef Co 2 good sausage bulls av 1,470 at \$2.85, and 6 steers and heifers av 805 at \$3.50.
 Sprague sold Fitzpatrick 3 mixed butchers av 1,083 at \$2.85.
 Lamoreaux & Young sold Stevens 16 good butchers steers av 950 at \$3.65.
 Roe & Holmes sold Cook & Fry 2 fat cows av 1,045 at \$3; 7 good butchers steers and heifers av 950 at \$3.75; 5 fat cows to Mich Beef Co av 1,096 at \$3, and 1 do weighing 1,140 at \$2.50.
 Haley sold Marx 2 bulls av 950 at \$2.75; 5 fat heifers av 858 at \$3.60 and 3 steers av 503 at \$3.
 Roe & Holmes sold Kaufman 12 steers and heifers av 873 at \$3.50 and 6 fat butchers' cows to Fitzpatrick av 1,061 at \$2.65.
 Burden sold Sullivan 6 steers av 950 at \$3.65; a cow weighing 1,350 at \$2.50 and 2 stockers av 520 at \$2.40.
 Strubel & Co sold same 2 stockers av 550 at \$3 and 9 mixed av 728 at \$3.25.
 York sold Mich Beef Co 2 sausage bulls av 1,095 at \$3.65; 14 steers and heifers av 927 at \$3.65 and 15 mixed butchers av 830 at \$2.95.
 Robb sold same 15 good butchers' steers av 1,092 at \$3.85 and fat bull weighing 1,720 at \$3.20.
 Spicer & M. sold Stevens 10 steers av 900 at \$3.70.
 Anstey sold Sullivan 5 steers av 706 at \$3.35.
 Spicer & M. sold Fitzpatrick 2 good butchers' steers av 1,055 at \$3.75; 3 mixed butchers av 743 at \$3.30; 2 do av 780 at \$2.75 and 2 fat cows av 1,230 at \$2.90.

SHEEP AND LAMBS.

There were 1,471 sheep and lambs on sale Thursday as compared to 1,198 one week ago. The quality averaged good. Market active and 20 to 25c higher. Range of prices, good to choice lambs, \$4.00 to \$5.25; light to good, \$3.25 to \$4.55; good to choice mixed lots, \$4.00 to \$4.90; fair to good mixed butchers, \$2.50 to \$3.90. All sold early; closing firm.
 Waltz sold Mich Beef Co 129 lambs av 72 at \$5.
 Knapp sold same 16 lambs av 94 at \$5.
 Lewis sold same 33 lambs av 65 at \$4.50, and 10 mixed av 93 at \$4.
 Sharp sold Loosemore 27 mixed butchers av 62 at \$2.50, and 14 lambs av 58 at \$4.25.
 Burden sold same 31 mixed butchers av 73 at \$3.75.
 Bergen sold Mich Beef Co 62 lambs av 65 at \$4.65.
 Clark & B. sold Loosemore 63 mixed av 59 at \$4.
 Spicer & Merritt sold Sutton 41 lambs av 94 at \$5.15.
 Belhimer sold same 16 mixed av 81 at \$4.50.
 Roe & Holmes sold Fitzpatrick 46 lambs av 92 at \$5.25.
 Sharp sold Sutton 105 lambs av 93 at \$5.15.
 Murphy sold Mich Beef Co 290 lambs av 83 at \$5.20.
 Sprague sold Hammond S. & Co 13 lambs av 81 at \$5.10.
 Taggart sold same 35 mixed av 87 at \$4.90.
 Roe & Holmes sold Mich Beef Co 21 lambs av 60 at \$4.75, and 39 do av 66 at \$4.90.
 Dennis sold same 118 lambs av 63 at \$4.50.
 Patrick & P. sold Sutton 69 lambs av 92 at \$5.15, and 10 mixed av 98 at \$3.50.

HOGS.

Thursday's receipts of hogs numbered 2,981 head, one week ago 3,367, with no change to note in quality. Market active and 10 to 15c higher than last Friday's closing. Range of prices \$3.90 to \$4; mostly \$3.95 to \$4. Stags 1/2 off. Rough and heavy \$3 to \$3.80. Pigs \$3.70 to \$4.10.
 Weeks sold Parker, Webb & Co 147 av 166 lbs at \$3.95.
 Luckie sold same 129 av 173 at \$4.
 Thompson sold same 73 av 185 at \$4.
 LaDuke sold same 59 av 204 at \$3.95.
 Gamber sold same 66 av 189 at \$4.
 Hurden sold same 37 av 170 at \$4.
 Estep sold same 31 av 193 at \$4.
 Sprague sold same 62 av 208 at \$4.
 Roe & Holmes sold same 53 av 167 at \$4 and 45 av 215 at \$4.
 Winn sold R S Webb 10 av 207 at \$3.90.
 Patrick & P. sold Hammond S. & Co 98 av 206 at \$4.
 Waltz sold Merritt 43 av 163 at \$3.95.
 Glenn sold R S Webb 51 av 180 at \$3.
 Stevens sold same 27 av 145 at \$4.
 Cox sold same 20 av 173 at \$3.90.
 Murphy sold R S Webb 27 av 164 at \$4.
 Davies sold same 70 av 162 at \$3.97 1/2.
 Hoover sold same 85 av 162 at \$4.
 Hoover sold Parker, Webb & Co 44 av 166 at \$4.
 Clark sold same 66 av 227 at \$4.
 McHugh sold same 30 av 167 at \$4.
 Smith sold same 36 av 190 at \$4.
 Taggart sold same 58 av 187 at \$4.
 Bunnell sold same 82 av 190 at \$4.02 1/2.
 Lewis sold same 52 av 160 at \$4.
 Carman sold Hammond S. & Co 95 av 169 at \$4.
 Haley Bros sold same 96 av 175 at \$4.
 Spicer & M sold same 38 av 181 at \$4 and 33 av 183 at \$4.
 Strubel & Co sold same 29 av 158 at \$4.
 Spicer & M. sold same 63 av 160 at \$4.
 Haines & H. sold same 68 av 173 at \$3.95.
 Dennis sold same 128 av 121 at \$3.95.
 Joe McMullen sold same 97 av 170 at \$4.
 Allen sold same 74 av 174 at \$3.95.
 Bergen & T sold Parker, Webb & Co 27 av 201 at \$3.95.
 Roe & Holmes sold same 84 av 198 at \$4, and 94 av 150 at \$4.
 Knapp sold same 97 av 197 at \$4.
 Roe & Holmes sold same 70 av 158 at \$4, and 62 av 195 at \$4.
 Young sold Belhimer 40 av 159 at \$4.

FRIDAY, Mar. 19, 1907.

CATTLE.

Friday's receipts of cattle numbered 494 head, through 74, on sale 350; one week ago 135. Market active and steady. \$4.60 was the highest price paid for 6 good steers, 1,245 lbs, and \$4.25 for 15 av 956 lbs. oxen, \$3.25 to \$3.70, balance as noted. Veal calves closed weak, 5c for best. Milch cows and springers closed stronger. Very few good here.
 Roberts & Spencer sold Mich Beef Co 4 bulls av 920 at \$2.70; 6 common butchers cows av 1,053 at \$2.25; a good steer weighing 1,040 at \$3; a fat cow weighing 1,110 at \$3, and 2 old cows av 855 at \$1.
 Leach sold Sullivan 4 feeders av 1,022 at \$3.65.
 Roe & Holmes sold Mich Beef Co 4 fat cows av 1,042 at \$2.75; 1 do weighing 1,210 at \$2.50, and a canner weighing 920 at \$2.
 McMullen sold Caplis 2 fat heifers av 820 at \$3.40.
 Jecole sold Sullivan 20 steers av 1,197 at \$4.
 Stabler sold Sullivan a fat bull weighing 1,410 at \$3; 3 heifers av 995 at \$3.25, and 9 steers av 1,138 at \$3.75.
 Lowrey sold Caplis 6 fair butchers steers av 1,015 at \$3.85; 6 do cows av 980 at \$2.50, and a canner weighing 920 at \$2.
 Forbes sold Sullivan 10 feeders av 995 at \$3.60; a good bull weighing 1,900 at \$3.35, and 3 heifers av 713 at \$3.35; also 4 cows to Caplis av 1,100 at \$2.70.
 Bullen sold Kaufman 4 common butchers cows av 901 at \$2.25; 2 heifers av 500 at \$3, and to Bishop 2 steers av 1,040 at \$3.80.
 Carman sold Caplis 3 fair butchers cows av 933 at \$2.65, and 2 fat oxen to Sullivan av 2,075 at \$3.70.
 Spicer & M sold Mich Beef Co a fat bull weighing 1,250 at \$3; 7 fair mixed butchers av 718 at \$2.60; 17 steers av 931 at \$3.65, and 1 do weighing 700 at \$3.25.
 White sold same 26 steers and heifers av 833 at \$3.60.
 Joe McMullen sold Caplis 10 mixed butchers av 1,099 at \$2.80.

Dennis sold Mich Beef Co 2 fair butchers cows av 875 at \$2.50, and 20 steers and heifers av 933 at \$3.60.
 Carman sold Sullivan 5 mixed butchers av 956 at \$3, and 11 do av 701 at \$3.35, also 4 do to Caplis av 750 at \$3.25.
 Haley sold Stevens 3 steers av 976 at \$3.75.
 Reason sold McIntyre 2 fat bulls av 815 at \$2.85.
 Leach sold same 2 heifers av 750 at \$3.40, and a cow weighing 1,180 at \$2.65.
 Lovewell sold Caplis 6 mixed butchers av 1,086 at \$2.80.
 McLaren sold same 8 mixed butchers av 943 at \$3, and 3 common butchers av 883 at \$2.30.
 Harges sold Loosemore 5 fat heifers av 764 at \$3.50, and 2 mixed av 735 at \$2.75.
 Nott sold same 1 fat heifer weighing 810 at \$3.25; a fat cow to Sullivan weighing 1,420 at \$3.25, and 12 steers av 933 at \$3.75.
 Reason sold Mich Beef Co 4 mixed butchers av 1,052 at \$3.25.
 Talmage sold Mason 5 steers and heifers av 962 at \$3.50.
 Roe & Holmes sold Sullivan 6 good steers av 1,245 at \$4.60 and 5 do av 1,014 at \$4.
 Cassady sold same 19 steers av 950 at \$3.75 and 3 mixed av 1,103 at \$2.75.
 Bullen sold Caplis 5 fair butchers' steers and heifers av 950 at \$3.65 and 2 common butchers av 850 at \$3.
 Roe & Holmes sold Mich Beef Co 5 mixed butchers av 936 at \$3.35 and 12 do av 967 at \$3.35.
 G Shelson sold same a fat bull weighing 1,410 at \$3; 3 mixed butchers av 1,143 at \$3.25 and 15 good butchers steers av 956 at \$4.25.
 Reason sold Sullivan 13 feeders av 874 at \$3.65.

SHEEP AND LAMBS.

Friday's receipts of sheep and lambs were light; only 670 on sale as compared to 1,133 one week ago; the quality was only fair. Market active and strong at above quotations. One small lot prime 80-lb. lambs brought \$5.35. All sold; closing firm.
 Leach sold Loosemore 23 mixed av 71 at \$4.10.
 Lomason sold same 16 mixed av 85 at \$4.50.
 Vickery sold Mich Beef Co 23 lambs av 65 at \$5.
 Roe & Holmes sold same 59 lambs av 88 at \$5.30.
 McMullen sold Fitzpatrick 44 lambs av 62 at \$5, and 13 mixed av 87 at \$3.95.
 Bullen sold Mich Beef Co 30 lambs av 86 at \$5.10, and 44 do av 81 at \$5.10.
 Lowrey sold McIntyre 13 lambs av 75 at \$5.
 Stabler sold Hammond S. & Co 90 mixed av 72 at \$4.25.
 Judson sold Mich Beef Co 96 lambs av 70 at \$5.10; 10 do av 65 at \$4.75, and 21 mixed av 81 at \$3.50.
 Schroder sold Mich Beef Co 53 mixed av 101 at \$3.80, and 66 lambs av 87 at \$5.

HOGS.

Hog receipts Friday 1,906 head as compared to 1,237 one week ago. Market opened active and strong, but at the close was rather weak. Bulk sold at \$3.95 to \$4.
 Vickery sold Parker, Webb & Co 36 av 199 at \$4.
 Hertler sold same 76 av 187 at \$4.
 Hauser sold same 153 av 177 at \$4 and 52 av 184 at \$4.
 Williamson sold same 40 av 172 at \$3.95.
 Roe & Holmes sold same 27 av 209 at \$4 and 96 av 170 at \$4.
 Roberts & S sold Hammond S. & Co 51 av 198 at \$4.
 Nott sold same 18 av 143 at \$4.
 Sutton sold same 133 av 177 at \$4.
 Harger & L sold same 42 av 166 at \$3.95.
 Lovewell sold same 44 av 175 at \$3.90.
 Discher sold same 32 av 167 at \$4.
 Leach sold same 68 av 172 at \$3.95.
 Harger & L sold same 16 av 123 at \$3.95.
 Warren sold same 66 av 184 at \$4.
 McMullen sold same 23 av 165 at \$4 and 22 av 190 at \$4.
 Reason & D sold same 17 av 164 at \$3.97 1/2.
 Fox & Bishop sold same 143 av 181 at \$3.97 1/2.
 Reason sold same 39 av 138 at \$3.85.
 Cassady sold same 66 av 181 at \$4.
 Bullen sold same 24 av 175 and 26 av 201 at \$4.
 Griffin sold same 10 av 154 at \$3.50 and 129 av 187 at \$4.
 Stabler sold Parker, Webb & Co 90 av 197 at \$4.
 Lowrey sold same 30 av 198 at \$3.90.
 Forbes sold same 34 av 230 at \$4.
 Harwood sold same 49 av 201 at \$4.
 Clark & B. sold same 95 av 166 at \$3.95 and 40 av 159 at \$3.95.
 Shook sold same 95 av 179 at \$4.
 Anstey sold Hammond S. & Co 47 av 163 at \$4.
 Gordon sold same 11 av 167 at \$4.
 Lomason sold same 43 av 158 at \$3.95.

OUR BUFFALO LETTER.

EAST BUFFALO, March 18, 1907.

CATTLE.—Receipts of cattle on Monday last were 4,862, as compared with 5,478 for the same day the previous week; and shipments were 3,850, as compared with 4,356 for the same day the previous week. Since the opening of the week cattle have held steady to firm, with prices on most grades about level with those of a week ago. Choice butchers' cattle have dropped back a little as have common to fair heifers. All others are steady to firm. On Wednesday butchers' cattle were rather dull, but all others were steady at the prices ruling on Monday. Quotations at the close on Wednesday were as follows: Export and shipping steers.—Prime to extra choice steers, 1,450 to 1,600 lbs., \$5.10 to \$5.15; do, 1,300 to 1,400 lbs., \$4.85 to \$5.00; good to choice fat steers, 1,450 to 1,600 lbs., \$4.85 to \$5.05; good choice fat steers, 1,300 to 1,400 lbs., \$4.60 to \$4.80; good to choice fat smooth steers, 1,100 to 1,300 lbs., \$4.40 to \$4.60; coarse and rough fat steers, 1,100 to 1,450 lbs., \$3.75 to \$4.35. Butchers native cattle.—Fat smooth dry fed steers, 1,050 to 1,150 lbs., \$4.10 to \$4.30; fat smooth dry fed light steers, 900 to 1,000 lbs., \$3.75 to \$4.00; green steers thin to half fattened, 1,000 to 1,400 lbs., \$3.50 to \$3.85; fair to good steers, 900 to 1,000 lbs., \$3.25 to \$3.75; export and shipping steers, \$3.55 to \$4.00; fair to good fat heifers, \$3.25 to \$3.55; light, thin half fat heifers, \$2.75 to \$3.15; fair to good mixed butchers stock, fat and smooth, \$3.25 to \$3.75; mixed lots, fair quality fat cows and heifers, \$3.50 to \$3.85; good smooth well fattened butchers cows, \$3.25 to \$3.50; fair to good butchers cows, \$3.50 to \$3.15; common old cows, \$3.00 to \$2.40. Stockers, feeders, bulls and oxen.—Feeding steers, good style and quality, \$3.50 to \$3.75; fair to good weight stockers, 650 to 750 lbs., \$3.40 to \$3.50; light, thin and only fair stock steers, \$3.00 to \$3.15; light stock heifers and yearlings, \$3.25 to \$3.75; export and shipping steers, \$3.55 to \$4.00; fair to good fat smooth butchers bulls, \$3.25 to \$3.60; fair to good sausage bulls, \$2.85 to \$3.25; thin, old, common bulls, \$2.25 to \$2.65; stock bulls, \$2.50 to \$3.00; fat smooth young oxen, to fit for exports, \$2.25 to \$3.00; fair to fairly good partly fattened young oxen, \$2.25 to \$3.65; old, common and poor oxen, \$2.25 to \$3.00. Veal calves.—Common to fair, \$4.00 to \$4.50; good to choice, \$4.75 to \$5.00; prime to extra, \$5.25 to \$6.00. Milch cows.—Strictly fancy, \$4.00 to \$4.80; good to choice, \$3.50 to \$3.85; poor to fair, \$3.10 to \$3.25; fancy springers, \$3.50 to \$4.50; fair to good, \$3.18 to \$3.32; common milkers and springers, \$3.14 to \$3.18. Thursday the market was dull for butchers' and shippers' grades, but no change was made in prices.

SHEEP AND LAMBS.—Receipts Monday were 13,800 as compared with 12,000 the previous Monday; shipments were 10,400 as compared with 9,000 same day the previous week. The market has held firm on choice heavy-duty sheep and is a little higher on prime lambs. Heavy export sheep are not in as good demand as usual, and do not clear up well. On Wednesday Michigan contributed most of the stock; the bulk of the choice Michigan lambs sold

at \$5.60 to \$5.65; good to fairly choice, \$5.30 to \$5.55; Michigan light lambs, \$4.55 to \$4.80; good to choice mixed sheep sold at \$4.25 to \$4.50; selected handy-weight wethers, \$4.00 to \$4.75; bulk of Michigan yearlings sold at \$4.75; and Michigan medium fed sheep at \$4.35 to \$4.60. Quotations at the close on Wednesday were as follows: Native sheep.—Selected handy weight wethers, \$4.60 to \$4.75; mixed sheep, choice to prime, \$4.25 to \$4.50; do., fair to good, \$4.00 to \$4.15; do., common to fair, \$3.75 to \$3.90; cull sheep, common to good, \$2.50 to \$3.60; heavy export sheep, mixed ewes and wethers, \$4.25 to \$4.40; selected, prime export wethers, \$4.55 to \$4.75; bucks fair to good, \$2.25 to \$3.00. Native lambs.—Extra to prime selected, \$5.40 to \$5.60; good to choice, \$5.00 to \$5.35; common to fair, \$4.75 to \$4.90; culls, common to good, \$3.50 to \$4.65; yearlings, fair to extra, \$4.60 to \$4.90; Market strong and higher on Thursday for some classes, and steady for others. Extra heavy lambs brought \$5.70 to \$5.75; fair to good, \$5.50 to \$5.40; culls and common, \$4.45 to \$4.85; mixed sheep, good to choice, \$4.25 to \$4.50; handy wethers, \$4.00 to \$4.65; culls to fair, \$3.50 to \$3.75; heavy export sheep, slow.

Hogs.—Receipts of hogs on Monday last were 23,840, as compared with 16,900 for the same day the previous week; and shipments were 16,900 as compared with 12,320 for the same day the previous week. The hog market has ruled active and higher this week, all grades selling at an advance. Medium and heavy being in light supply, have advanced beyond light hogs and yearlings. A good many of the light hogs were of poor quality, lacking in flesh, and were slow of sale. This is also true of pigs. As compared with a week ago, however, all classes of hogs are higher, and closed Wednesday with most grades firm at the advance. Quotations at close on Wednesday were as follows: Good to choice 185 down to 160 lbs., \$4.10 to \$4.15; good to choice pigs and light yearlings, 125 to 150 lbs., \$4.12 to \$4.20; mixed packing grades, 185 to 200 lbs., \$4.12 to \$4.20; fair to best medium weights, 210 to 250 lbs., \$4.20 to \$4.25; good to prime heavy hogs of 270 to 300 lbs., \$4.20 to \$4.25; Rough, common to good, \$3.25 to \$3.75; stags, rough to good, \$2.75 to \$3.25; pigs light, 100 to 120 lbs., good to prime corn fed lots, \$4.12 to \$4.15; pigs, common, thin skippy to fair quality, \$3.75 to \$3.90. Thursday the market closed steady. Good to choice yearlings and mixed packers, \$4.15; mediums and heavy, \$4.20; pigs, \$3.90 to \$4; rough, \$3.40 to \$3.75; stags, \$2.55 to \$3.05.

CHICAGO.

UNION STOCK YARDS, March 18, 1907.

CATTLE.—The receipts for last week were 46,072 against 43,110 for the previous week, and 43,413 for the corresponding week in 1896. Up to and including Wednesday of this week the receipts have been 29,844, as compared with 32,707 for the same days last week, an increase of 11,000 head. The market has fluctuated some during the past week but on Wednesday showed more strength, with a shade advance in some grades. Fair steers, cows and heifers were better than a week ago, choice steers, stockers and feeders about even. Veal calves showed a decline of 25 to 30c. Sales were on a basis of \$3.70 to \$4 for the commonest dressed beef native steers up to \$4.60 to \$5.30 for good to choice shipping and export cattle, with an occasional sale of some fancy beefs at \$5.50 to \$5.65. Stockers and feeders held firm, with sales at \$3.40 to \$4.25. Feeding bulls went mostly at \$2.75 to \$3, bolognas largely at \$2.60 to \$2.90, and export bulls at \$3.15 to \$3.50. Calves sold from \$4 for common, up to \$5.60 to \$5.75 for extra. Thursday receipts were 8,005. Market ruled strong at Wednesday's prices. No fancy steers were on sale, but the best sold up to \$5.35.

SHEEP AND LAMBS.—Receipts for the past week were 57,413 as compared with 63,899 the previous week, and 63,886 for the corresponding week in 1896. Up to and including Wednesday of this week the receipts have been 40,878, as compared with 39,809 for the same days last week, a slight increase. The market has held firm all week, and buyers have been active. The demand from all sources keeps up well, and for both sheep and lambs. On Wednesday prime native lambs sold at \$5.25 to \$5.35, and a good many good to choice at \$5.05 to \$5.15; medium lambs, \$4.50 to \$4.80. The best western sheep sold at \$4.40 to \$4.50, and small lots of extra native sheep at \$4.40 to \$4.50; culls and common, \$3.60 to \$3.75. Receipts on Thursday were 9,000. Market ruled strong to 10c higher. Native sheep sold at \$3.25 to \$4.60; western, \$3.50 to \$4.30; lambs, \$4.25 to \$5.00.

Hogs.—The receipts for last week were 124,389 against 164,833 for the previous week, and 152,027 for the corresponding week in 1896. Up to and including Wednesday of this week, receipts have been 69,943, as compared with 74,504 for the same days last week, showing a decrease of 5,000 head. The market has ruled firm and higher all week. On Wednesday there was a further advance of a strong 5c, but toward the close of the day the market was rather easier, owing to a bad break in the provision market. But this is regarded as only temporary, and if receipts do not increase there is no reason for a decline that will last. During the day prime heavy and good mixed sold at \$4.40 to \$4.65; prime mediums and butcher weights, \$4.05 to \$4.12 1/2. Light sorts were not in as active demand as heavy and butcher weights, hence did not advance in the same proportion; yet good assorted sold at \$4.06 to \$4.07 1/2. Roughs and common sold at \$3.75 to \$3.90. Receipts on Thursday were 23,000. The market averaged 6c lower; light sold at \$3.85 to \$4.05; rough packing, \$3.65 to \$3.80; mixed and butchers, \$3.85 to \$4.07 1/2; heavy packing and shipping, \$3.75.

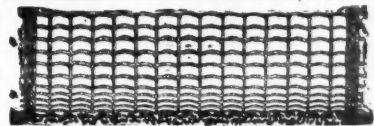
THREE varieties of cabbage were grown at the Maine experiment station to test the effect of size of seed on the heads. In two varieties the larger seed was found to produce much heavier heads. Tying up the outer leaves was found to have no influence upon the maturity of the head, while it caused a marked decrease in size, the moisture collecting within the leaves almost invariably caused the heads to decay. Mulching the plants with swale hay produced heads slightly larger than were borne by unmulched plants. But little effect on the size of the head was produced by deep cultivation, but the plants appeared to mature more uniformly than when shallow cultivation was given.

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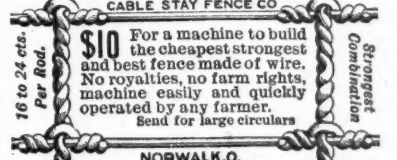
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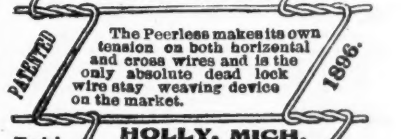
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WANTED. 25,000 bushels Shell Corn, 10,000 bushels Beans. No cull beans. **H. C. WARD,** Pontiac, Mich.

Horticultural.

For the Michigan Farmer.

THE STRAWBERRY SEASON OF '96.

The most remarkable thing about the season of '96 was its unprecedented earliness. We saw ripe berries on an old yard of Haverlands May 23, and picked a dish of berries from this patch May 26. The first berries picked on our new yards was on May 28, when we had a dish of Crescents and Warfields. On June 1 we picked one bushel of very fine fruit. This we think was doing very well, for my vines had received a very heavy mulch, which must have kept them back several days.

We had about an acre of strawberries, and picked about 200 bushels. Of course this does not come up to the four and five hundred bushels to the acre records that some growers can show. However, we believe there were places in our yards where the yield upon a small area was at the rate of three or four hundred bushels to the acre.

If the rows of Wilsons, which we have always used as a pollinizer, had yielded like our Warfields and Crescents, our crop would have been increased perhaps 50 bushels. The old Wilson seems to be greatly on the decline, and I guess we might as well give it up. We are going to experiment with the Wolverton, Beder Wood, Brandywine and others, to see if we cannot get a pollinizer to fit our soil. There was quite a sufficient rainfall in our vicinity, and with the heavy mulch we used, our berries held out well to the end, in size, quantity and quality. A small patch of Parker Earle, on a very rich, deep soil, fully sustained their record of a heavy bearer. In the season of '95 they did not amount to much with us, so last spring we did not set any of that variety. We shall now give them a more thorough trial. The size and quality of our berries last season gave us quite a name, which we think will greatly aid us in marketing our berries in the future. A good business reputation is a thing to be desired above mere financial gain.

Being on a rented farm we were not prepared to set out the usual amount of ground last spring, so we were compelled to keep our old bed for a second picking. We intended to clean out the old vines, thin the plants and cultivate and hoe just as soon as we were through picking; but other work coming on we had to do this work a little at a time, and it was two months or more before we had completed the job. One patch of quarter of an acre of Warfields and Parker Earle, which we cleaned soon after picking, made a magnificent growth of foliage, and when the time came for covering them for the winter, they looked as well as the new beds.

Someone has said that "an old bed of strawberries will not send out as many runners as a new one." We think, however, that it depends upon how the old bed is treated. Any person who had the job of keeping the runners off from those Warfields of mine certainly would not say they did not run much. But then we thinned out the plants to about 14 inches with a 20-inch path, and thoroughly stirred the soil with both hoe and cultivator, as we wished to see what could be done. One thing is certain, however, these Warfields sent out runners in large numbers, and the more I cut the runners off the more determined they seemed to send them out. The result was that each plant attained the size of a small hill, and judging from appearances we shall get as large a crop the second year as the first.

Heretofore I have been seriously handicapped because of being on a rented farm. We now own the farm we are on, or will when we get it paid for, and can lay our plans ahead. We expect to get our place in shape to make money soon. We shall set out half an acre to blackberries, and increase to 3 or 4 acres as soon as we can get that much soil in proper shape.

ST. CLAIR CO.

M. N. EDGERTON.

For the Michigan Farmer.

THE MYSTERIES OF A HOT-BED.

It will soon be time to think about preparing a hot-bed for our early vegetables. Whether we grow them for market or for home use, it matters not, for every farmer should start a few of the earliest vegetables under glass, for it will help tide over that "dry spell" we have at the last of May, just before strawberries come.

The secrets of a hot-bed are not so deep to fathom as many suppose; if we just keep in mind a few of the common laws of nature, we can be as successful with one as an experienced gardener. The object is to have an even, germinating temperature with the proper amount of moisture and light. The last two properties are easily secured, but the first requires judgment and proper management to secure, but when obtained, is as easily controlled as the two former.

Many prepare their frames and place them in position in the fall, but this is not necessary for success. It makes a great difference for what a hot-bed is used, as to when it should be built, but with the average gardener, the 15th to 25th of March is the proper time.

Select a southern exposure and dig down about one foot in the soil. The length and width must be governed by the size and number of sash to be used. A frame 12 feet long will require four ordinary sashes.

If sawdust is convenient, dig the cavity one foot larger each way than the frame; the frame can be made of foot-wide boards, nailed at each corner to a small post.

When the frame is in position, fill about it with the sawdust. To fill the frame, procure some forest leaves and mix them thoroughly with some fresh horse manure, but if the leaves are not to be had, use only the manure. The object of adding the leaves is that they assist in maintaining a more even temperature. Fill in and tread down, using a couple of pails of water in the operation; the more water used, the less will be the heat from the manure, but the longer will the moisture be retained in the bed.

The frame should be nearly full, as the manure will settle considerably. The quantity of soil to be added must be governed by the kind of seeds sowed. If roots are planted, moresoil is needed than for top-plants. The back of the bed should be much higher than the front; the sash should have the same slant as the surface of the bed.

Place the sashes on and leave it for a day or two to allow the manure to heat. Place a thermometer in the bed and when it does not register above 85 deg., sun heat not counted, then sow your seeds. Unless sun heat is needed to maintain the proper temperature, it is well to shade the bed till after the plants are up, when they will need all the sunlight possible.

The plants should be watched that the sun does not cook them during the middle of the day. Plants will stand 90 deg., but 85 is nearer right. When there is danger of too great heat, slide the sash down from the top to allow some of the hot air to escape. The plants should have water, but not enough to cause them to damp off. Be careful when cooling off that no cold draught strikes them, as the plants being very tender are easily chilled.

After the plants become larger and the weather warmer, the sashes may be left off longer each day till a short time before ready to transplant, when the sashes may be left off entirely, that the plants may harden; just previous to transplanting they should be deprived of water as another means of hardening the plants.

KALAMAZOO CO.

B. A. WOOD.

For the Michigan Farmer.

FRUIT NOTES.

The Juneberry has been sent out with the inflated recommendations common among nurserymen. A few days ago we inquired of a fruit grower how he liked it. His answer was that he would dig up the bushes the coming summer. The berries ripened unevenly, what stayed on long enough to mature, but the most of them fell off while still green. In flavor it was inferior to the huckleberry, and it was no larger in size. It blossomed well, but as a fruit it was undesirable. It shares the fate of many another novelty. It may do better in other localities.

Just now there is a craze for crossing different kinds of plants. We have the strawberry-raspberry, the potato-tomato, and the raspberry-blackberry. Next we may expect an apple-peach or a plum-cherry, and possibly after a time a pear-cranberry. The strawberry-raspberry has proved to be of no value except as a novelty. The raspberry-blackberry is claimed to be hardy, with a fruit whose flavor is midway between the two berries, however valuable that may be. It will probably go the way usual with novel monstrosities.

We believe that in selecting peach trees there is one point commonly overlooked. The trees are not uniform in coming into bearing. Some varieties bear in a short time after being set, and others require several years for coming to maturity. The Crawford is an example. It is considered a shy bearer, and for good reason, yet in orchards where it has been allowed time to mature, it has proved valuable. We have seen trees of this variety which had been allowed plenty of room that had yielded large crops through a long succession of years, and had been a source of more profit than twice the same area of ground set with orchards in the usual way.

Why should we not follow the same plan with peach orchards that is often advocated for the apple? Why not set out hardy, long-lived varieties for a permanent orchard, and fill in with the quick-growing sorts that mature early and are soon out of the way? The permanent trees might be set two rods apart each way and occupy the ground, if they formed such heads as some of the Fosters do when given the opportunity. This would make only forty trees to the acre, but by planting trees between them there would be one hundred and sixty, and if properly selected three-fourths of them would soon be ready to produce fruit. By the time these latter had become unprofitable, the whole ground could be given to the others.

Some orchards are planted with the expectation that the rows are to be thinned out after a time, but that method is not altogether satisfactory. The trees of a variety will be about equally valuable, the owner will dislike to cut them down, and in the end will leave too many. We frequently find orchards whose usefulness is impaired for this very reason. Then, too, if the trees are of one kind they are all likely to come to a limit of usefulness at about the same time, leaving none worth keeping for a permanent orchard.

We have never seen this plan of a permanent peach orchard carried out. Perhaps it is not advisable, but it has been

suggested by noticing the long years of usefulness to the credit of some kinds of trees. We should like the opinion of someone who has tried it. The peach is usually not very long lived, anyhow. Perhaps there would be nothing to be gained by this method.

The statement is made by a horticulturist of note that the profitable crops of fruit are the first seven. That the first fruit is the largest and finest. After this the tree ought to be cut down. If such a plan were followed there would be no place for a permanent orchard. This may be correct, but we think the statement a little too general. The majority of varieties bear early and die young. They are the most conspicuous because they are what have been demanded. People are in a hurry. They desire quick returns from the orchard, and leave the future to care for itself. Would it not be more profitable to aim at more permanency in our peach orchards and so plant trees that would produce fourteen good crops instead of seven? That is the problem which we wish solved.

There are berry crates innumerable, but none of them are satisfactory. For the more distant markets a gift package is generally used, but it is expensive. If the market is not far away the crate may be returned at small cost, if it is not lost; but the shipper needs an extra supply, as when he wants the crates he wants them badly, and cannot wait for the commission merchant to hunt them up or the railroad company to bring them back from the wrong station. In either case there is considerable expense attached to marketing berries, and ten chances to one it is just the point the novice will not half consider till time for marketing his first crop.

The bushel crate is rather large to handle conveniently. It gets tipped around too much. The half-bushel is too handy. It does fairly well for playing "catch." In either case the express agent or drayman who cannot knock a fair profit out of a package is an exception. Another form of package has a hoop handle. This is an improvement. It can be picked up and swung into a car or into a dray, where if it drops six inches or a foot it will not matter. Such treatment will be excellent for the contents.

Last year some of the growers in this vicinity, after submitting to the tyranny of express companies, loaded their fruit on wagons and drew to market, a distance of thirty miles. The result was most satisfactory. The fruit arrived in much better condition than when shipped by rail, and at no greater expense. The express companies soon found that they could improve their methods of handling, and did so very promptly.

The most convenient crate we have yet seen consists of trays, each holding eight quart boxes arranged in two rows. These trays may be shipped singly by placing a light cover on each, or they may be placed one above another and fastened securely together by hooks at the ends, thus making a crate containing a half bushel, three pecks, a bushel, or more. When placed on sale it can be quickly taken apart so as to display all the fruit in trays containing one peck each. There are no bothersome partitions or "fillers" to get out of place and lost, as with the ordinary bushel crate. The only separate piece is the cover for the crate.

There are quart baskets and boxes innumerable. The square vineer box carries fruit well, but as it has a raised bottom to set over the berries in the box underneath, customers are apt to be suspicious of it. They mistake it for a short quart, though it is full measure. We have tried paper boxes for two seasons and do not like them. They bend in handling, which causes the berries to pack and mash. This brings us to the wooden or splint basket, the most common of all, which suits us best at present, both for shipping and for the local market. This is the result of our experience, merely. We find that opinions differ considerably as to the relative merits of boxes.

F. D. W.

THE SAN JOSE SCALE.

The appearance of this scale in several sections of this State, and the knowledge that has been gained of its ability to damage and destroy fruit trees on which it may secure a start, has caused several parties to write us for a full description and history of the pest, and in accordance with their requests we give what authentic information we could obtain regarding its introduction and spread in this country, and its habits and characteristics.

According to authentic information this scale was first brought into California from Chili, on trees imported from that country in 1870. It was first noticed by fruit shippers in 1873 at San Jose, from which fact its popular name is derived. It spread rapidly in that State, and one of the first to investigate it was Prof. Comstock, who described it scientifically as *Aspidiotus perniciosus*, because he considered it the most destructive and pernicious scale insect known in this country. In the course of twelve years the insect spread through all

the fruit-growing regions of California, through Oregon, and into the State of Washington. It is known as the worst insect pest of deciduous fruit trees on the Pacific coast, and has caused great pecuniary loss. Many crops of fruit have been ruined, and thousands of trees have been killed.

The pest began to spread to the east. In 1892 it was found in New Mexico, and in 1893 in Virginia. Its first appearance in a northern State was in a New Jersey nursery, to which place it is believed to have been brought from California on nursery stock. But it is also carried on fruit, and will soon be spread over every fruit-growing State. It is known to be present in New Jersey, Maryland, Virginia, Florida, New Mexico, New York, Ohio, Michigan, Illinois, Iowa and Minnesota. The following description of the scale is taken from a bulletin issued by the division of Entomology of the U. S. Department of Agriculture:

The San Jose Scale belongs to the same group of scale-insects—the Diaspidæ, or armored scales—to which the common and well-known Oyster-shell Bark-louse of the apple belongs. It differs from this species, and in fact from all other eastern species found upon deciduous fruit trees, in that the scale is perfectly round, or at most very slightly elongated or irregular. It is flat, pressed close to the bark, resembles the bark of the twigs in color, and when fully grown is about one-eighth of an inch in diameter. At or near the middle of each scale is a small, round, slightly elongated black point; or this point may sometimes appear yellowish.

When occurring upon the bark of the twigs or leaves and in large numbers, the scales lie close to each other, frequently overlapping, and are at such times difficult to distinguish without a magnifying glass. The general appearance which they present is of a grayish, very slightly roughened scurfy deposit.

The natural rich reddish color of the limbs of the peach and apple is quite obscured when these trees are thickly infested, and they have then every appearance of being coated with lime or ashes. When the scales are crushed by scraping, a yellowish oily liquid will appear, resulting from the crushing of the soft yellow insects beneath the scales, and this will at once indicate to one who is not familiar with their appearance the existence of healthy living scales on the trees.

They are easily scraped off with the finger nail, and the bark beneath them will be seen to be darker in color. The natural color of the bark is also somewhat changed, as will be seen by comparing the places from which the scales have been removed with the spots upon which the scales do not occur. The outlines of the removed scales will be noticed upon the bark, and the circumference is frequently changed in color, becoming somewhat purplish. Where the scales do not occur so thickly they are more perceptible, and upon young, reddish twigs the contrast is quite noticeable, as the scales there appear light gray. The younger and smaller scales are darker in color than the older and larger ones, and sometimes appear quite black, while the still younger ones are yellowish.

During winter the insect is to be found in the half-grown or nearly full-grown condition. The young begin to hatch and to crawl from under the female scales shortly after the trees leaf out, and from this time through the summer there is a constant succession of generations. The young louse is an active, crawling creature, very minute and yellowish in color. The young spread out upon the new growth of the tree, settle down, and each begins to secrete a scale. The male is an active, two-winged insect. The full-grown female loses her legs and antennae, and bears a very slight resemblance to a living insect.

The insect affects not only the young twigs and limbs and, with young trees, the entire plant, but is also found upon the leaves and upon the fruit. When abundant the fruit is destroyed. One of the most characteristic points in the appearance of the insect upon the fruit is the purple discoloration around the edge of each scale. So far as we know this result is confined to this one scale-insect. Upon the leaves the insects have a tendency to collect along the midrib on the upper side of the leaf, in one or more quite regular rows, and also to some extent along the side ribs. The infested leaves turn brown, but do not have a tendency to fall as a result of the damage.

Aside from the transportation of the insect upon nursery stock, it may be carried upon fruit sent to market. These are its principal modes of travel from one part of the country to another. In orchards and in neighborhoods its spread is in the newly hatched condition only. The female is wingless and after once becoming fixed can not move; the male alone is winged. The young lice, as before stated, are active, and crawl with considerable rapidity and great persistence, so that they may descend from one tree and crawl for a number of yards to another tree. The spread in this manner, however, is comparatively insignificant. Strong winds may carry the young bodily from one tree to another, but the principal method of spread of these young lice is by means of other insects which are winged, and by birds. The active young lice will soon crawl upon a small winged insect, particularly if the latter is of a dark color,

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and are carried by it to considerable distances. The young lice also crawl upon the feet of birds which visit the tree and may thus be carried for miles. They are often found crawling upon ants, and ants, as everyone knows, are great travelers.

REMEDIES.

Where trees are found to have become badly infested the safest and, in the long run, the most economical course will be to cut them down and burn them, trunk and branch. Where the infestation is less marked, insecticide washes and sprays may be used. The young lice, before they have begun to secrete scales (and at this time they can only be discovered with the help of a magnifying glass), may be destroyed by spraying with kerosene emulsion. A formula for this mixture follows:

Kerosene.....2 gallons
Common soap or whale-oil soap.....1/4 pound
Water.....1 gallon

Heat the solution of soap and add it boiling hot to the kerosene; churn the mixture by means of a force pump and spray nozzle for five or ten minutes. The emulsion, if perfect, forms a cream which thickens upon cooling, and should adhere without oiliness to the surface of glass. If the water from the soil is hard, or has a large percentage of lime, add a little lye or bicarbonate of soda, or else use rain water. For use against scale-insects dilute one part of the emulsion with nine parts of cold water.

For the older scales, the washes may be divided into those which can be used in summer without damage to the trees, and those which are so strong that they can only be applied in the winter season when the tree is dormant. None of the summer washes are perfectly efficacious, and it is doubtful whether any of them will prove of more benefit than the kerosene emulsion just mentioned.

The most favored winter remedy in California, however, is the lime, salt, and sulphur mixture. This is generally used throughout the States by progressive fruit-growers. It consists of—

Unslaked lime.....10 pounds.
Sulphur.....5
Stock salt.....4
Water to make.....15 gallons.

This wash will do great damage to the trees if applied during the growing season, and should be used only in winter. All the sulphur and half the lime are placed in a kettle, and 8 1/2 gallons water added, after which the contents of the kettle are boiled briskly for about an hour. The solution, which at first is yellow from the sulphur, will turn very dark brown, assuming more or less of a reddish tint, and will finally change from a thick batter to a thoroughly liquid condition, the product being ordinary sulphide of lime. All the sulphur is added to the remaining five pounds of lime and the latter slaked, after which the slaked lime and salt are added to the sulphide of lime already obtained, the whole being then diluted with water to make 15 gallons. This should be strained before application, as it does not form a perfect liquid solution, on account of the considerable quantity of undissolved lime, which will soon settle to the bottom unless the solution is constantly stirred while being sprayed.

The Spraying Pump.

The use of the spray pump is becoming so general that no farm is fully equipped without one. There are four important features necessary for a good pump. First, it must have a large air chamber; second, it must have brass valves and brass working parts throughout; third, it must have fine spray nozzles, and fourth, it must have what is most important of all, a perfect automatic agitator.



The Garfield and Ensign have all of these important features, and are made by the Field Force Pump Co., Lockport, N. Y., who guarantee them satisfactory in every respect. This company is not a stranger to our readers, and if you will mention this paper when you write for information, you will receive special consideration and a valuable book of instructions free.

RECEIVED.

Catalogue of the George A. Sweet Nursery Company, Dansville, N. Y. This nursery company started business in 1869, and have 150 acres of trees of their own growing.

Arthur J. Collins, of Moorestown, New Jersey, sends us the catalogue of the Pleasant Valley Nurseries for 1897. He publishes a certificate from Prof. John P. Smith, Entomologist of the New Jersey Experiment Station, that his nursery stock is entirely free from San Jose scale, Peach Rosette, Yellows, or other dangerous diseases or insect pests.

The Dundee Nursery, of Dundee, Ill., D. Hill, proprietor, sends a spring catalogue for 1897 of evergreens, fruit and ornamental trees, etc. This nursery makes a specialty of evergreens, and has a high reputation for the quality of the stock it sends out.

Johnson & Stokes, Philadelphia, Pa., have a handsome and useful catalogue for 1897. This firm has a reputation for sending out good seeds, as well as having all the latest novelties for the farmer, the gardener and the florist. Our readers will

surely be pleased with this catalogue, and they should send for it.

Heman Glass, Rochester, N. Y., sends us a catalogue of "Glass" safe seeds," grown on his Lakeview Seed Farm. He makes a specialty of water-cleaning his seeds, which is an effective method of getting rid of light and half-filled seed.

BLACK KNOT.

At a recent meeting of the Connecticut Pomological Society, the spread of black knot was discussed by State Pomologist N. S. Platt. He said that the belief that black knot is spreading in many parts of that state seems to be true, as it is feeding on trees of the wild cherry and the sweet cherry and multiplying itself on them. That this is so seems not at all necessary, as the disease is one that is readily brought under control by cutting and burning the knots and spraying the tree with solutions of sulphate of copper. The knot spreads by spores and copper is death to the spore that it touches. The only requirement necessary for success is to do thorough work and you will be surprised to find how readily the thing yields.

The way to use copper is to spray in spring before the buds open, with the copper solution of one pound sulphate of copper in twenty-five gallons of water. Later on, in early summer, when the tree is growing, give two or three sprayings of strong Bordeaux mixture, finishing by the time the fruit is half grown.

The copper solution and the Bordeaux are both useful and necessary in controlling the shot-hole fungus of the leaf and the rotting of the fruit on the plum, so one method of work is serviceable in controlling these distinct troubles. But Mr. Platt desired to state that from repeated trials of Bordeaux upon Japanese plums he had found that it had always worked injury to the foliage, and of course he was unable to recommend it for them. But the European plums are uniformly benefited by it, retaining the foliage to the end of the season.

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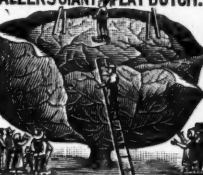
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Grange Department.

Our Motto:—"The farmer is of more consequence than the farm, and should be first improved."

Address all correspondence for this department to
KENYON L. BUTTERFIELD,
AGRICULTURAL COLLEGE, - - MICH.

News from Michigan Granges is especially solicited.

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THE EDITOR'S TABLE.

Does your Grange wish a Traveling Library? The appropriation of \$2,500 per year, allowed by the present legislature for traveling libraries, will enable the librarian to equip 50 new libraries. There are already in the hands of the librarian over 20 applications for the new libraries. We advise Granges desiring to secure one of these libraries to make immediate application to Mrs. Mary C. Spencer, State Librarian, Lansing. Granges who are using these libraries are enthusiastic in praise of them.

Last autumn the Grange Visitor asked all the heads of State institutions to send statements of the work and expenses of the respective institutions. Many replied and all their articles were published verbatim. We are just in receipt of a very full and complete account of the Michigan Mining School. It is very long, but we believe it is not only fair to publish it entire, but feel that it will be of great interest to the many readers of the FARMER who have studied our State institutions. A portion of Dr. Wadsworth's article will appear this week, and the remainder next week.

We have before now had occasion to compliment Bro. Kirby on his excellent reports of the Hillsdale Pomona Grange meetings. One in another column is a model for correspondents. Why? 1. It is not very long. 2. It tells what the folks said. We must say that Granges are not doing their duty in this matter. A report like this from each Pomona, and occasional shorter ones from each Subordinate Grange will do more to make a success of our Grange department than any one feature.

We believe that no measure in the present legislature contains more merit than that introduced by Rep. Kimmis, providing for the payment of county officials in salaries only, and requiring that all fees and perquisites be turned into the county treasury. The present plan of feeling officials has nothing to commend it. In the first place the fee system is unbusinesslike. Most public work is purely of a business character, requiring the same qualities in public agents as are demanded by business men in their employes, and calling for the same business practices as where in any business. In but a comparatively small number of cases do business men pay their employes anything but their stated salaries, and even then it is done as an incentive. This motive can not enter the public service, because the official agrees to do his duty anyway. Moreover, the granting of fees has resulted in making certain county officers grossly overpaid, out of all

proportion to services rendered, with the consequence that men seek these positions solely for the loaves and fishes. Again, under this plan the public does not know, what it ought to know, the actual salary of every official. Let the public business be done as business men do it. Pay officials a fair salary. Demand the best services of competent men.

Another reason for commending this bill is found in the fact that it strikes at an evil that is near home. We admit that there can be money saved by more economical management of state affairs. But we have often asserted that our taxpayers have been altogether too prone to cry against the evils, real and imagined, existing in state expenditures, when as a matter of fact local taxes are by far the greatest in proportion, and the remedies more immediately in the people's hands. Let economy begin at home—in the township and county, and pervade these affairs as well as state and national expenditures. Doubtless there will be quite a strong opposition to this bill from those who are and want to be county officers. Only persistent work on the part of the farmers' organizations will bring about the result desired.

It appears that the advocates of the township unit school bill system for district schools were not disheartened by their defeat of two years ago. At least there is a bill in the House, drawn on about the same lines.

We find three classes of objectors to a State appropriation for farmers' institutes.

1. Croakers who are not intelligent enough to appreciate a farmers' institute, many of whom never attend one; or persons who are, even if intelligent, chronic grumblers. We need pay no attention to these people; their influence amounts to nothing.

2. Intelligent critics who claim that the institute appropriation is unnecessary because counties can hold their own institutes without State aid. This criticism arises from a narrow outlook. The facts are that up to two years ago only about a dozen counties in the State were regularly holding farmers' institutes without State aid. In these dozen counties it is true the institutes were successful, large, attended, profitable, and of high character. But these dozen counties are not the State of Michigan, and whether it can be done or not, the facts are that, in four-fifths of the counties of the State, institutes were not being held. During the past two years 70 counties of the State have held a farmers' institute each year with an average attendance per session of about 250 people. Now if institute work is a good thing, this increase of large county institutes from 12 to 70 per year is sufficient justification for the State appropriation. Besides this it is a fact that in most of these very counties, where the farmers held their own institutes yearly, they are now holding under the State law, and feel that it is a great advantage and help to have the State aid.

3. The third class of objectors is made up of men who profess to believe that a State appropriation for farmers' institutes is class legislation. We confess that we can not see the logic of this position, and cannot understand the arguments by which a man can reach this conclusion. Institute work professes to be, and is, educational work; somewhat technical in character, yet of a general educational nature, intended not primarily for farmers, but intended primarily for education in farming. As a matter of fact all classes attend these institutes, and are interested in them as educational institutions. Moreover, the same logic that would condemn a State appropriation for farmers' institutes would condemn a State appropriation, for an Agricultural College; and farmers' institutes are precisely on the same ground. The Agricultural College attempts to teach farming to young people who come to the College, which must, of course, be located at a certain place; farmers' institutes profess to, and do, carry the best of the College out to the farmers who cannot come to the College. One is no more class legislation than the other; are farmers willing to stretch the argument? Moreover, if appropriations for farmers' institutes make class legislation, how about district schools? Let us make a parallel between the two. District schools are for the education of farmers' boys and girls directly; they benefit no other class. They are supported in

part locally, and in part by the whole State, that is, a tax on everybody. Farmers' institutes are educational institutions; they are for the education of the farmers in the business and life of agriculture. They are supported in part locally, and in part by a State tax, levied upon every calling and industry. If one is class legislation why is not the other?

We have gone into some length in this discussion because we feel that ninety per cent of the farmers who know anything about institute work are favorable to it, but we fear that the influence of the ten per cent is, in the minds of some, receiving undue weight.

GRANGE NEWS.

ROLLIN GRANGE No. 383 is in good working order. We have twenty-seven paid up members, have good social times at all meetings, and a good interest manifested at our last meeting March 5th. Some of the sisters furnished refreshments. We had some good discussions. We hope for a prosperous year in Grange work.—ORVILLE BABCOCK, Sec.

NATIONAL GRANGE.—Mr Editor: I send you herewith a statement of new Granges organized from February 1st to February 28th, 1897, both inclusive: Indiana, 1; Maine, 1; Minnesota, 1; New Hampshire, 1; New Jersey, 1; New York, 3; Ohio, 4; Vermont, 2; Wisconsin, 1. Total, 15. During the same period there were nineteen Subordinate Granges organized. Faithfully yours, JOHN TRIMBLE, Secretary.

CASCADE GRANGE No. 63 is yet living and will confer the mysteries of the fourth degree upon five candidates on the 11th inst. "Wherein consists the true greatness of man," will be discussed at the first opportunity.

If all members would take an active part and attend all the meetings, an interest would be created, more farmers would join in, and great benefits would result. Kent Pomona meets at Harmony hall on the 17th and 18th inst.—LECT.

VERONA MILLS GRANGE No. 667 is in a prosperous condition. The attendance is good. We rarely ever miss a meeting, and a literary program is always gone through with. February 20th we celebrated Washington's birthday by appropriate exercises consisting of patriotic recitations, songs, and sketches of Washington given by all the members. Bro. John Nugent, our delegate to the State Grange, installed our officers January 23 and gave an excellent report. Another very pleasant feature of the evening's entertainment was an oyster supper.—MRS. LAURA HUNT, Lecturer.

ROME GRANGE NOTES.—The last meeting of Rome Grange was held on Saturday evening March 6th. The following questions were discussed with much interest:

Part 1. "Is it possible or desirable to curtail production in this country in any line of farming, and thereby raise the price of farm products?"

Part 2. "To what extent can the farms of this country supply the needs of its inhabitants in the line of farm products?"

If it were possible to curtail production it does not follow that the prices would thereby be raised. Statistics were read showing that the higher prices of wheat have often concurred with the most abundant production, and vice versa. The amount of wheat raised in the United States is only about 18 per cent of the world's production and cannot control the price for any great length of time. If farmers of this country could govern the prices of their own products they would be the worst monopoly in existence. The Grange does not desire such a condition of things.

The people must be fed, and the farmer is a mighty factor in the evolution by which the millions are supplied with the necessities and luxuries of life. The Grange will hold a musical contest in the near future between the ladies and gentlemen.—DORA L. DOWLING.

The March meeting of Hillsdale Pomona was held with South Jefferson Grange on the fourth. Everything considered, the attendance was as large as could be expected. After reports from subordinate Granges, the entire time was given to literary work. The welcome address was given by Sister Touse, response by Sister Hunker. Sister Touse was fluent and positive. We are passing through hard times; farmers sympathize with each other, but are largely responsible for their condition. Reckless extravagance has much to do with it. Our fathers lived in log houses and rode in lumber wagons and were prosperous. We must have our mansions and ride in unnecessary and expensive machinery. Prosperity is in the direction of reform.

Bro. Watkins opened the discussion on "How can farmers best improve their condition?" They can do so by a more practical and thorough education, by diligently following specialties, as in thoroughbred stock raising, by having energy and patience, by hanging on and making adversity a good schoolmaster and by looking after legislation. With these qualities farming would be a success. Bro. A. L. Davis endorsed all that Bro. Watkins had said and also the sentiments of Sister Touse. We are living, and have been for years, beyond our means. But history never showed a uniformity of condition for any great length of time. Adversity followed prosperity. After discussion the Grange passed resolutions favoring the restoration of the quarantine against all

foreign cattle, the passage of the Kimmis bill, and the repeal of the law requiring supervisors to take crop statistics. We had good music by the choir, the recitation of a comic piece by Clio Phillips and a pleasant and profitable meeting.

Jefferson Grange is our trading Grange. Bro. A. Bowditch has had charge of the dry goods department for about two months and has sold \$100 worth. Sister Ash has the groceries and has sold about \$700 worth. Bro. A. L. Davis deals in corn, grass seeds, peas, salt, boots and shoes, and has during the year sold about \$5,000 worth. This he apparently does for the honor and glory there is in it, for he sells for wholesale prices. The extent of his trade at times has a marked effect on the prices in the city and he has become a benefactor to his class, the extent of which is known and too little appreciated. It can only be wished that every Grange was as useful as South Jefferson Grange.

Our next meeting will be held at the same place, South Jefferson Grange hall, on the first Thursday of April.—WM. KIRBY.

THE MICHIGAN MINING SCHOOL.

BY M. E. WADSWORTH, PRESIDENT.

NO. I.

The Michigan State School of Mines was established ten years ago last September as the fourth and last of the institutions of Michigan which are devoted to higher education. From the moment of its inception its single object has been to send out men who are qualified to take active part in the development of the mineral wealth of our State and nation; and any study which is essential to this end will not be found wanting in its courses of instruction.

The institution has been singularly happy in its location. It is an axiom of modern education that any school which is to obtain the greatest return for the money and energy spent in establishing it, must be situated in a region which shall, from its very nature, serve, free of all expense, as a part of the real equipment of that school. This can be so only when the district presents, for the daily observation of the student, the most exhaustive and "up-to-date" practical applications of the subjects which are taught in the school—a district in which the student is inspired with a strong appreciation of, and interest in, his future work, by being brought into frequent contact with able men whose lives have been devoted to the same profession. The location must be where the body of the people regard the institution as a co-worker with them in the main business of their daily life, and naturally take far more interest in it than in a school whose object and officials have little in common with them.

The student thus lives in an atmosphere which harmonizes with his work, and his attention and energies are not distracted and wasted by making digressions into matters which have no bearing on his real future.

On this account medicine, law, theology, and cognate subjects are best taught in large cities, whose hospitals, libraries, courts, churches, societies and meetings of congresses devoted to such subjects, all furnish material indispensable for the proper teaching of these branches of knowledge; mechanical and electrical engineering can be most advantageously studied in a locality containing machine works, manufactures, mills and lighting and power plants; and civil engineering can be most thoroughly acquired in a school which has in its immediate vicinity numerous examples of modern constructions in the form of bridges, railways and their appurtenances, large buildings, etc., and the establishments which design and produce the material for them. Similarly, mining engineering can be most effectively taught only in a district containing numerous mines which are worked on the largest scale and in which scientific and economic considerations are given full sway.

A DESIRABLE LOCATION.

From this point of view the Michigan Mining School has, more than any other school of mines in America, been fortunate in its location. Within a radius of eleven miles from its doors are situated some of the largest, deepest, and most successful mines in the world.

The most powerful and stupendous machinery ever employed in mining is here in constant use and always open to the inspection of the student. The aggregate horse power of the engines used by only two of these mining companies exceeds the grand total of all the engines used in the gold and silver mines in the United States in the halcyon days of 1899; or far more than double all those employed in the grandest spectacle this earth has ever seen—the World's Exposition of 1893.

The mines of the Marquette, Menominee and Gogebic iron ranges are within a few hours' ride of the school, and furnish a most efficient means of illustrating a large part of its teachings. The value of the annual output of the various mines and other mineral industries in the State, and mainly in the Upper Peninsula, reaches the enormous total of \$70,000,000, and places Michigan, among the states of the Union, second only to Pennsylvania in the value of its mineral products.

The further development of this vast industry requires men who are thoroughly trained for this special work, and to meet this requirement the Michigan Mining School was established. It was fortunate for the school that its founders realized at the start, that to fulfill its mission, it must not, as is so frequently and unfortunately done, waste its energies in the vain attempt

to teach branches foreign to the object of the institution, and which are already well taught by other schools maintained by the State. In consequence they determined that this school should confine its attention wholly to *mining and the subjects relating thereto*; hence the course is designed to teach the student to conduct explorations in the forest and field; to distinguish the useful minerals and rocks; to understand the geological principles that govern the formation and association of useful mineral products, and to determine approximately their values; to study ore, building stones, limes, cements, mortars, coal, salt, gypsum, petroleum, natural gas, clays, fertilizers, gems, and useful vegetable products; to survey, map, and lay out the ground, the railroads, tramways, and towns; to select or design hoisting, transportation, power and light plants; to design the mills, furnaces, docks, dams, bridges, shaft and rock houses, and other structures; to determine in each case which is the most suitable method for opening and conducting a quarry or mine, and of timbering, ventilating and draining it; to assay, concentrate and smelt ores; to investigate the strength and other properties of engineering materials, that designs may be intelligently worked out; to make working drawings to illustrate fully these designs; to understand the most economical methods of generating and using steam; to study in detail engines, pumps, boilers, and other machinery, and the methods of operating, testing and repairing them; to master the principles of electricity and its generation, storage, transmission, and use as an illuminant and source of motive power; to study hydraulics, and its various applications in civil affairs and hydraulic mining; to understand mine management and accounts; in short, to train men to be of real use in any line of work connected with the winning and reduction of mineral products.

Such work naturally arranges itself along various clearly defined lines in each of which the training may proceed to almost any length, hence the branches of study which here most naturally resolve themselves into specialties are drawing; chemistry; metallurgy; mechanical, civil, electrical and mining engineering, ore dressing and geology. In consequence the men educated at the Mining School are now engaged as surveyors; mining, civil, electrical and mechanical engineers; woodsmen; explorers; railroad men; chemists; assayers; mill men; quarrymen; manufacturers; stock raisers; farmers; teachers, etc. It therefore appears that the Mining School has fulfilled its mission and educated its students to be useful and efficient men, who are daily adding to the world's material wealth and to its stock of knowledge.

THE RANGE OF SUBJECTS

bearing upon the mineral industry is extremely wide; and this, coupled with the fact that all men are endowed with a natural aptitude for some lines of work, while wholly unfitted for others, and the further fact that circumstances beyond control frequently force men into particular occupations and deprive them of the opportunity to prosecute a full course of training, all conspire to demonstrate the correctness of the modern educational view that a rigid set course of instruction in higher education is now out of date, and that the student must have some liberty in selecting the studies which are to enable him to cope with his life work. This fact has been long recognized here, and the Michigan Mining School has squarely met the issue by adopting an elective system so designed that while the student is allowed to choose the main lines of his work, he is compelled by the proper sequence of studies to take up such subjects as are essential to a broad and thorough engineering education.

Further, in the effort to save the valuable time of the young men, the school work is continued during forty-five weeks a year instead of thirty to thirty-six as in most institutions. This enables the student who wishes to do so, to accomplish as much in three years, as he would ordinarily do elsewhere in four.

THE INSTRUCTION GIVEN

at the Mining School is intended to be strictly professional and practical, and the school considers that to give a general training is as little in keeping with its legitimate functions, as would be the case in schools devoted to law, medicine and theology. This kind of training is already fully provided for by other institutions maintained by the State, and to attempt it here would cause a serious deterioration in the quality of the engineering instruction, and add only another source of expenses to the State. It is clear that the Michigan Mining School in no way encroaches on the work which legitimately belongs to any other of our institutions of learning; it rather assists them by offering an education which not one of them can possibly give in the way it is given here. The mineral industries adjacent to the Mining School are the most efficient portions of its equipment. Without a similar advantage no school can properly teach mining, and any attempt to do so will result in an inferior engineering training, no matter if millions of dollars be spent in equipping the school itself.

The Pennsylvania Railway Company wisely saw this principle when it established its school at Altoona. It wanted railroad men, and it very properly trains them at a place where all matters pertaining to railways are directly under the eye of the student.

The Mining School forces its students to do thorough work, and also to acquire some practical knowledge of the subjects they are studying. That day has passed when engineers could be made through an equipment of lecture rooms, teachers and books; this school has therefore ever been mindful of the wise observation of Seneca:

"Long is the road to knowledge through precepts only; short and effective through practical examples;" hence its students are taught not only to hear, but to see, and to use not only their minds, but their hands as well. In this fact, and in it only, can be found the reason why its graduates have been signally successful in practice, and that they have rarely been diverted into a line of work different from that which they pursued at this school.

The Mining School was established by an act of the legislature approved May 1st, 1885, and was opened for the reception of students on Sept. 15th., 1886. Its inception, establishment, and to a great extent its appropriations, have been due to the foresight, energy and executive ability of Hon. Jay A. Hubbell, of Houghton. He has spared no labor in endeavoring to accomplish everything he deemed essential to the success and prosperity of the institution.

In 1886 Albert Williams, Jr., a graduate of the College of New Jersey, was elected as principal and had charge of the school until he resigned in the summer of 1887. M. E. Wadsworth, a graduate of Bowdoin and post graduate of Harvard, was chosen as director and still remains as the chief executive officer.

The first classes were taught in rooms located on the top floor and in the basement of the "fire engine house" of the village of Houghton.

Four additional rooms in the Odd Fellows' building were secured in September 1887, but the continued growth of the school made it necessary to vacate the latter quarters during the summer of 1888, and to replace them by others obtained in the Roller Rink building, now the Armory Opera House.

In May, 1889, the school was moved into the building now known as Science Hall. This hall was erected by the State on land donated by Judge Hubbell, but it was even then well known that the building was too small for the necessary work of the school. In 1890, ore dressing works were constructed, and there was added in 1892 a small structure containing a furnace for roasting ores. As the school grew faster than its most sanguine friends had any reasons to hope, further buildings became necessary, and during 1894-95 the State erected another large one to accommodate the departments of drawing and mechanical and electrical engineering, and the offices and lecture rooms of the department of civil and mining engineering.

The equipment of the institution has also been increased, so far as its funds have permitted, and the total school property, inventoried last fall, amounted to \$231,895.97.

In 1886, a course of instruction of two years duration was announced, but was not prepared; indeed, the educational side of the school was not regularly organized until the school year 1887-88. Since then the curriculum has been steadily broadened and perfected in detail. In 1889 a three years' course was adopted and in 1893 this was changed to four years. The full elective system went into successful operation in 1895, and has proven entirely satisfactory to both instructors and students alike.

At the time the present president took charge of the educational side of the Michigan Mining School, there was no educational policy developed, no course of instruction laid out, beyond the statement that the course should be two years in length. At that time there were only two distinct State schools of mines in operation, besides the Michigan Mining School, neither of which confined itself to mining engineering subjects. The Colorado State School of Mines was established in 1874, and in 1887-88 it had in all its courses 45 students. The Missouri School of Mines with its preparatory and all its other departments had that year 46 students. There were numerous departments of mines in connection with various state and other universities and colleges; but the number of students of mining in all of these, except Columbia and Lehigh, were much less than those previously given for Colorado and Missouri. Columbia had in 1887-88, 51 students in mining, and Lehigh, 36.

The way was dark and forbidding, and the remains of past failures could be seen everywhere. In truth no state school of mines that was ever organized in the United States, could by any exertion of imagination be called successful up to that time. Success could not be hoped for except through the locality of the school and a rigid adherence to principles to be laid down then and steadily carried out. Locality, alone, could not do this, but it also needed an organization effected that should attempt to save the good and remove the evils of other institutions.

THE EDUCATIONAL POLICY.

The main principles then formulated for the re-organization of the school were as follows:

1. To keep the school a special one for giving instruction in all branches relating to the development of the mineral wealth of the State and nation.
2. To give the very best, most practical and highest education in this field that it was possible to reach, with the means at command.
3. That the instruction should always be by laboratory and field methods, or a true union of theoretical and practical instruction.
4. That the school should in its earlier days put every dollar obtainable into equipment and collections for teaching purposes and spend nothing for show, until the departments were in a condition to do their proper and designated work.
5. That special opportunities should be given to men of mature or advanced age, who had been engaged in practical work, and who wished to obtain an education to aid them in their subsequent labors.

6. That the catalogues and other publications should state, so far as known, the exact truth about the school and its instruction.

7. That no one should be appointed an officer in the school or be retained therein, for any other reason than his fitness for the place, and his capabilities for doing his work.

8. That students in the school must work or leave; and that no distinction should be made on account of anyone's worldly wealth or honor, or birth place—the only criterion should be his ability to perform his duties. Also that quality and thoroughness should be the aim, and not mere numbers of students.

9. The institution should be managed on business principles, in which the professors were to be allowed to conduct their departments according to their own individualities. They were to be held responsible for producing the required results, but not for their manner of bringing about these results. They were to have entire choice of, and control over, their subordinates who were to be solely responsible to them. Further, that the professors should be given by the president every aid and assistance possible in developing their departments, and be supported in enforcing proper discipline.

10. That the school was to be conducted for the benefit of the students and for the State and nation, and not for the particular advantage of the town in which it happened to be located nor for any special clique. This has been done in the belief that in serving the State best, the town would in the end be more benefited than by any other policy.

So far as it has rested with the president these principles have been put into execution. The result has been eminently satisfactory, since no school in America has had in its course in mining engineering any such phenomenal rise and development as this, whether viewed from the standpoint of attendance of students in mining engineering, or in the thorough and practical nature of the education given; or in the standing the school has won at home and abroad, and it is now generally known as the Freiberg of America. Since 1890 the Michigan Mining School has been recognized as

ONE OF THE LEADING INSTITUTIONS

of its kind in the world, and it will ever strive to retain this position by hard work and true merit if those for whose benefit it was established will do their duty toward it.

All credit is due to the professors and their assistants who, working under these principles, have so nobly aided in building up this strong and flourishing college; to the able board of control who have assisted and sustained them; and to the noble State that has furnished the means to build an institution of which the State and nation may most justly be proud.

The application of the preceding principles has had such effect upon the institution that the president feels that the work he undertook to do some over nine years ago has been more than accomplished. The result already reached is far beyond his expectations and much exceeds any hopes or dreams he dared indulge in when he took charge of the institution.

At the present time the president can see almost unlimited opportunities for the future development and advancement of the Mining School, which he would like to see seized, yet he can truthfully say that if it is desired, he is not only now ready but perfectly willing to lay down this constantly increasing burden and care.

Veterinary Department.

CONDUCTED BY DR. W. C. FAIR.

Advice through this department is free to our subscribers. Each communication should state history and symptoms of the case fully; also name and address of the writer. The initials will only be given. When an answer is requested by mail it becomes private practice, and a fee of fifty cents must accompany the letter.

COUGH.—I have a five-year-old horse that has a cough. I have been feeding him bran mash and oil of tar. J. B., Holland, Mich.—Give half an ounce of powdered licorice and two drams ground ginger in each feed.

GRAPY STAGE OF GREASE HEEL.—A six-year-old Clyde mare has had a bad case of scratches. It is all healed where the sores were but has left a hard callus and under the fetlock are three or four bunches about the size of a hickory nut and the leg is badly stocked. I would like to reduce the swelling. A. M., Vernon, Mich.—Remove the tufts of skin with a pair of scissors or a sharp knife and apply one part iodoform and five parts vaseline twice a day.

INDIGESTION.—What is good for a cow that loses her cud in the winter time, and what is the remedy? I have had them lose it a number of times. G. K. G., Alden, Mich.—Ruminating animals cease to chew their cud when they stop eating coarse food, and so soon as they regain their former appetite they commence chewing their cud. Losing their cud is not a disease, but the result of some other disorder. Give epsom salts in one pound doses to open bowels, and change their feed.

INJURED UDDER.—A cow had the end of a teat bruised about ten days ago. I cannot get any milk out of that quarter of the bag. The only way I can milk her is to use a quill. If I dry up that quarter I am afraid the teat will close up. There seems

to be something loose inside that stops the flow of milk. What can I do to save that quarter of her bag? E. F. D., Whitneyville, Mich.—Let your cow go dry in the sore quarter, and when she comes in another year you will be able to milk her by using a milking tube.

DISTEMPER.—I have a mare five years old which has had distemper this winter. She has a swelling between bones of lower jaw. It broke on the outside and continues to swell and discharge. It has broken three times. I am afraid it will leave a lump in throat. P. H., Ambler, Mich.—Give ten grains quinine three times a day. Inject wounds twice a day with one part carbolic acid to twenty parts water. I do not think there will be any swelling left if you keep wounds open long enough and allow abscess to empty out freely.

AZOTURIA.—A horse has kidney trouble. The attacks come on very suddenly. He has very little pain, but cannot move hind quarters. I called a veterinary surgeon; he treated him for kidney disease. J. H. L., Williamston, Mich.—If you will feed horse less and exercise him more he will not have any similar attacks. His bowels should be kept acting freely. Give him six drams barbadose aloes, one dram calomel and one dram ginger at one dose; that will purge him. Also give one ounce glauher salts twice a day until you turn him to grass.

SEPTIC FEVER.—A cow that had a calf 10 days ago had been fed cornstalks, was in good condition and had always been a good milker, but now she gives only about a quart of milk twice a day. She did not give a drop for two days after she had her calf. About three inches from the end of her tail there seems to be a piece of bone gone about two inches long. What shall I do if she calved before her time? Will she come to her milk? N. L., Bentley, Mich.—Give cow twenty grains sulphate quinine three times a day and one ounce compound tincture gentian three times a day. Keep warm and comfortable and change her feed.

PIGS HAVE WORMS.—I have some pigs that are about two months old. I weaned part of them when they were six weeks old, and the others when eight weeks old. The first ones weaned were taken sick. One of them could not stand up, and worms about the size of a straw came from its mouth and nose. The others are not doing well. P. M., Fowlerville, Mich.—Give thirty grains powdered sulphate of iron and half a dram powdered area nut twice a day to each pig for a few days, and then once a day. Keep their bowels open.

LUMP JAW.—TEAT HAS TWO HOLES.—1. A cow has a lump on left jaw bone. Can it be removed? Is her milk good? If it is not, would it be all right to feed to calves? She has just dropped a calf. The lump is about the size of a quart bowl; very little matter comes from it. 2. Another cow has two openings in one teat, the second one being close to the udder. Can I close it with a stitch? Or would it be all right to cut it? Would it heal over and close the hole? F. W., Hersey, Mich.—1. Milk is fit for calf but not for domestic use. Better fatten cow. 2. Make edges of opening in teat raw, sew wound and it will soon heal. Use iodoform once a day.

WEAKNESS.—WEAK BACK.—1. Can you tell me what to do for a mare that seems out of condition? She is 13 years old and 4 years ago miscarried; though she has not seemed to be downright sick she seems to lack the spirit she used to have. Her hair is long and shaggy, and she sweats on the slightest exertion, very often sweating in the barn when idle. Since aborting she seems to lack the ability to put on flesh. She is well fed. She has a discharge of a milky fluid very frequently, more especially when she is pulling heavily. Had I better breed her? She missed two years ago. 2. Have a gelding which seems to be weak in both hind quarters. Think his kidneys are out of order; he nearly always groans when passing urine. His appetite is good and he seems to be in pretty good health otherwise. What shall I do with him? J. G., Gaylord, Mich.—1. Your mare will not breed. Give two drams sulphate of iron twice a day. 2. Apply alcohol to back of gelding and give him rest. Give one dram acetate of potash three times a day in water.

BRUISED SHIN.—ABSCESS.—I have a mare six years old this spring that, about six months ago, kicked through a plank partition. Got her foot fast between two of the planks. I released her and noticed that the skin was off in a number of places, one quite large patch on the quarter and one on the ankle joint. I thought nothing of it at the time and drove her the same as ever. In the course of a week I noticed her leg swelled some. About two months ago she refused to eat and seemed to suffer great pain in her leg which now swelled very full about six or eight inches from the hock. A few days later it broke about half way between hock and fetlock joint. Six weeks later wound had healed. Now her leg is badly swollen, worse than at first. It looks as though it would break open in the same place. D. M. B., Williamsburg, Mich.—Poultice shin with hot linseed meal poultices, and as soon as pus forms, open abscess at lowest point. Inject wound with peroxide of hydrogen three times a day. After wound heals, if the limb is swollen, apply iodine once every two days. Provide a cooling laxative diet.

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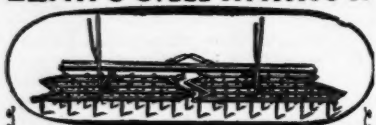
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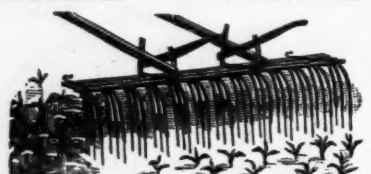
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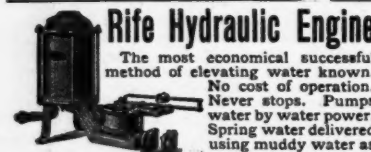
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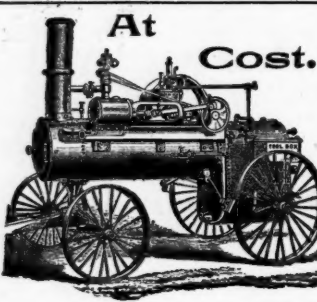


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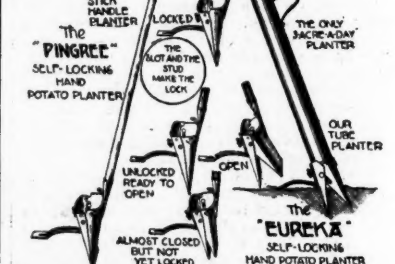
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